

Migration of immune cells from the periphery to device with time post implantation

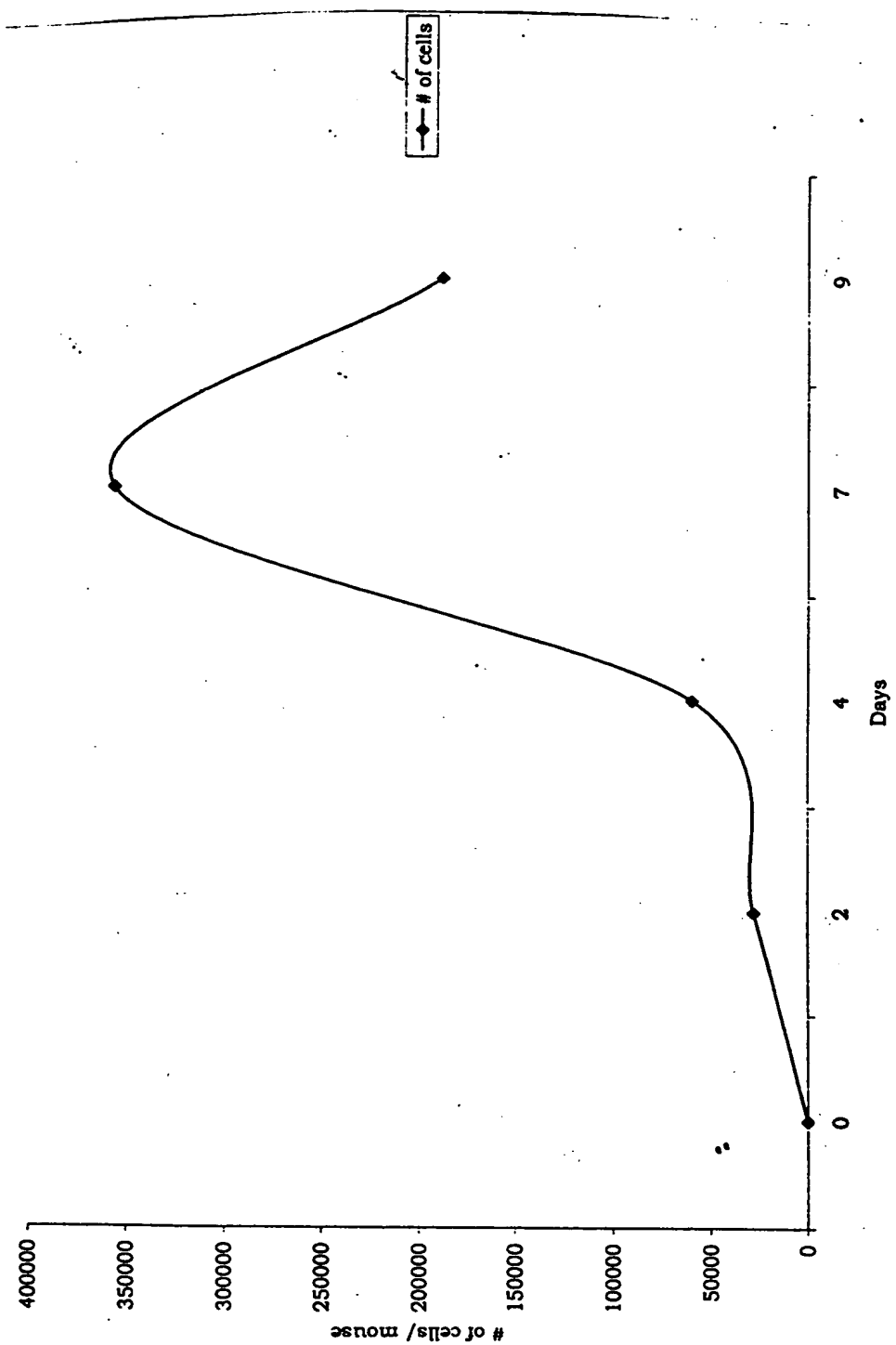


Figure 1

Migration and accumulation of immune cells in *device* 4 days post insertion as compared to naive mice PBMC

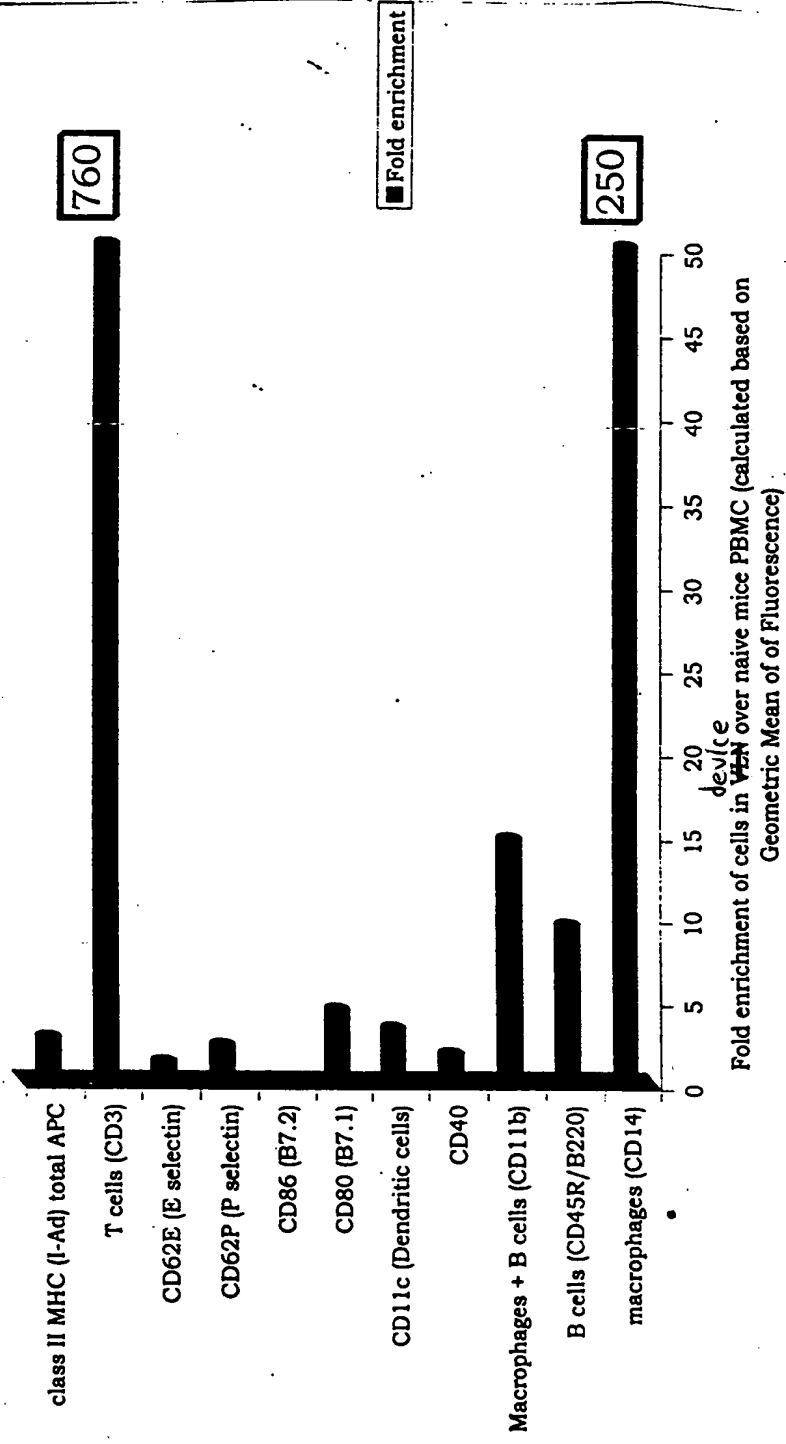


Figure 2

Phenotype of cells aspirated from the device at various days post implantation (lymphocyte gate)

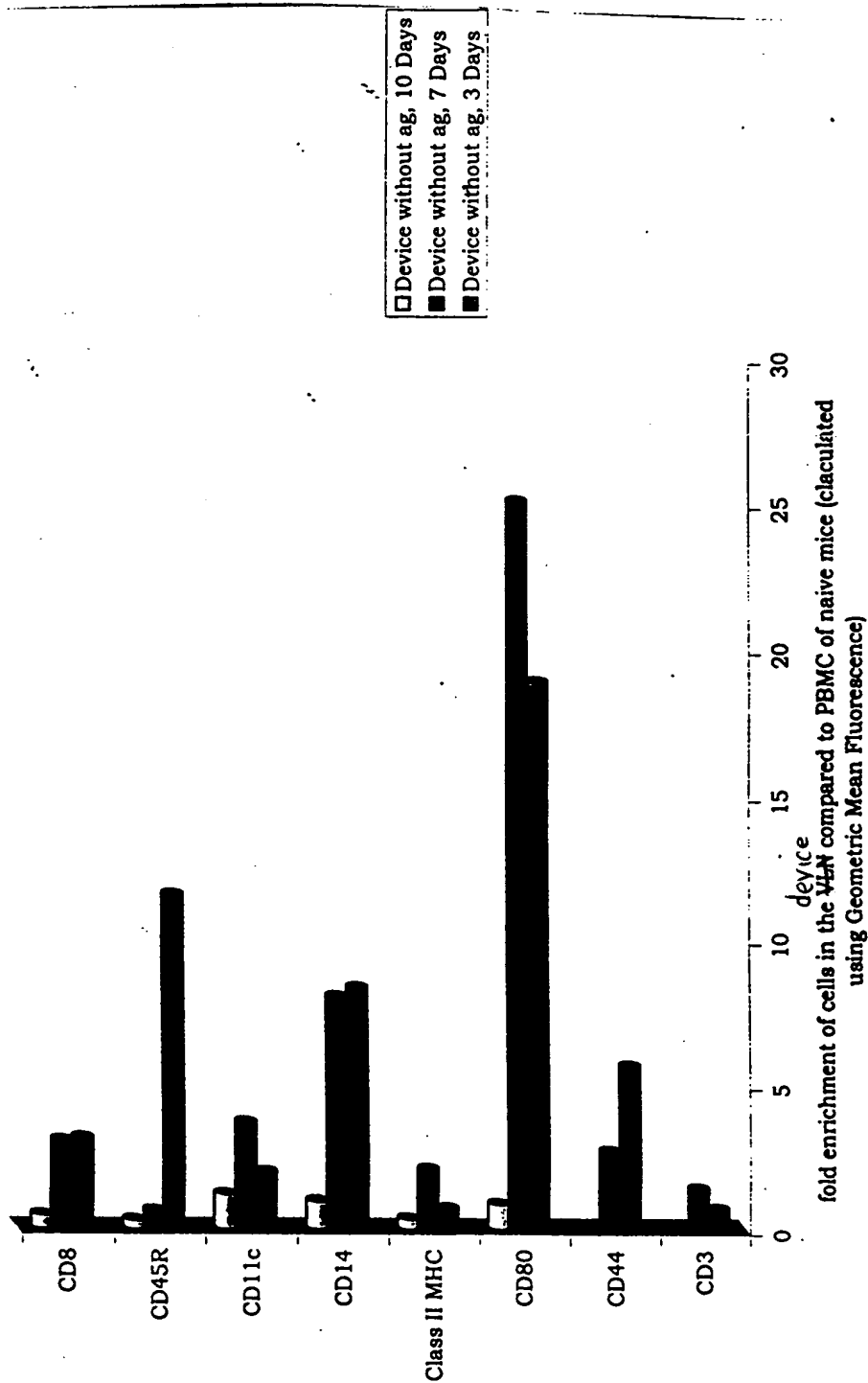


Figure 3

Intra-device immunization induces further augmentation of CD3, CD80 and CD14 bearing cells as well as extending their inhabitation in the device

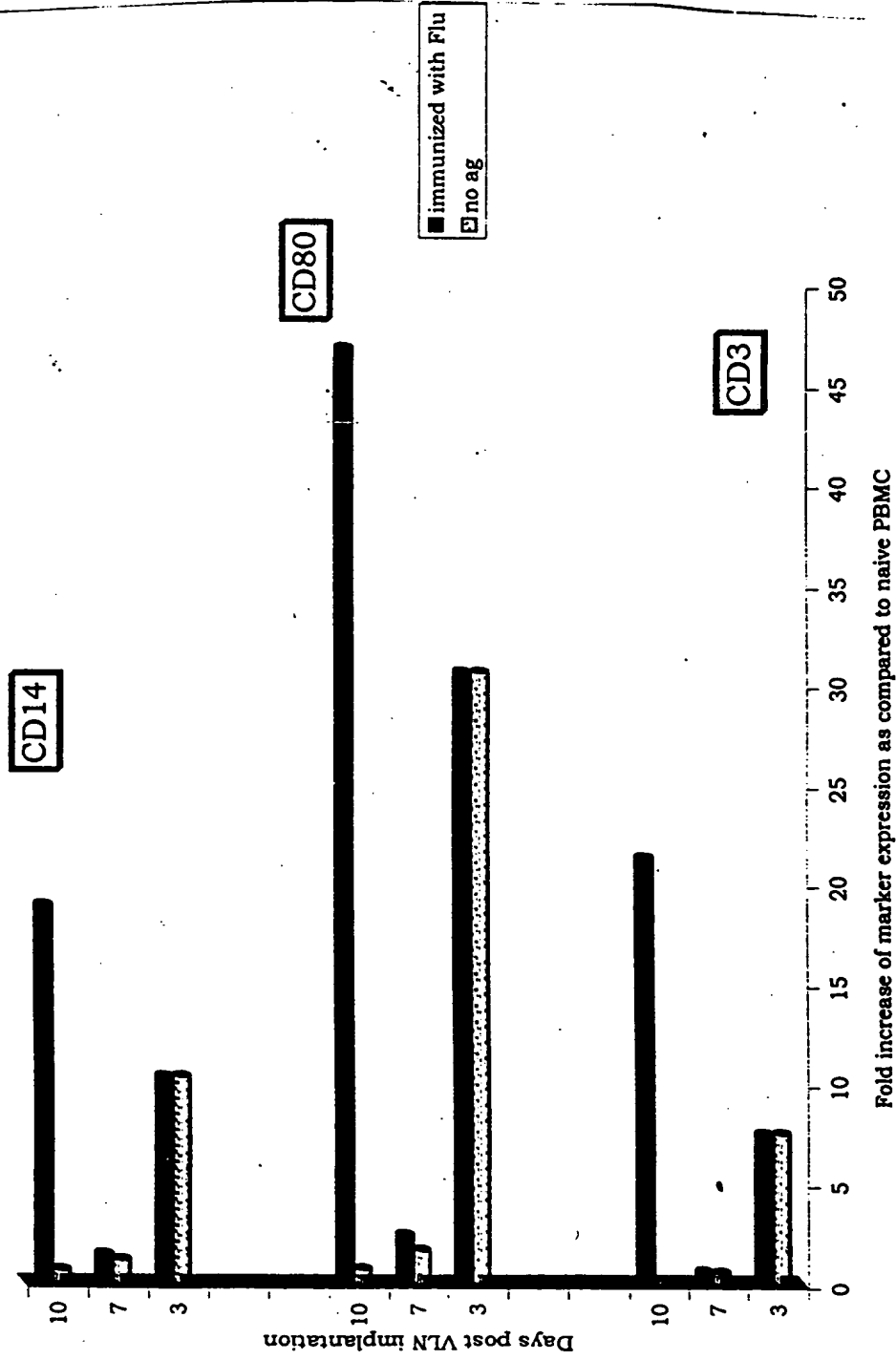
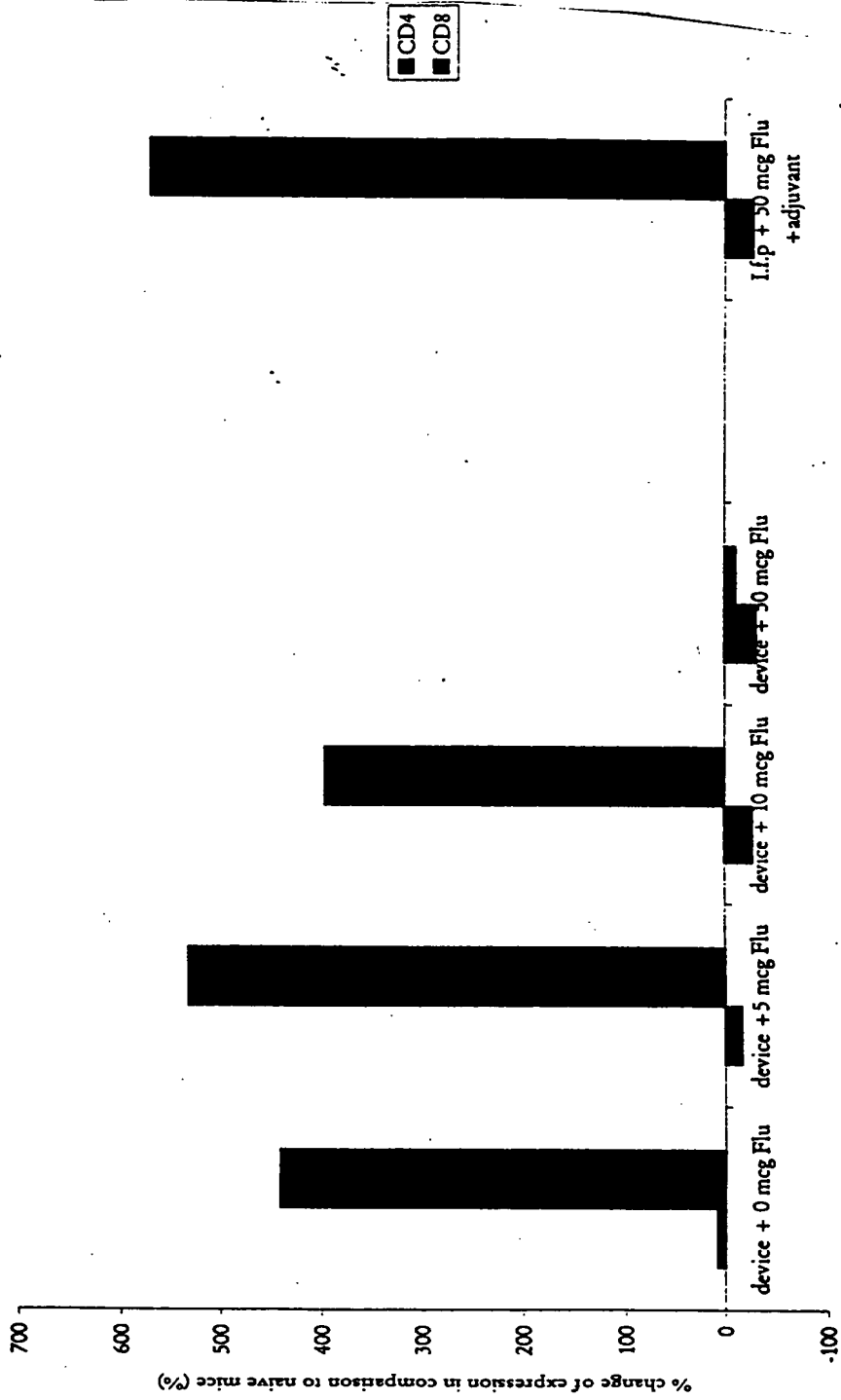


Figure 4

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Modulation of CD4 and CD8 expression on spleen cells following intra-device immunization with Flu antigen



Treatment

Figure 5

Gamma Interferon secretion by spleen cells from Balb/c mice following a single intra-device immunization with Flu antigen in the absence of adjuvant

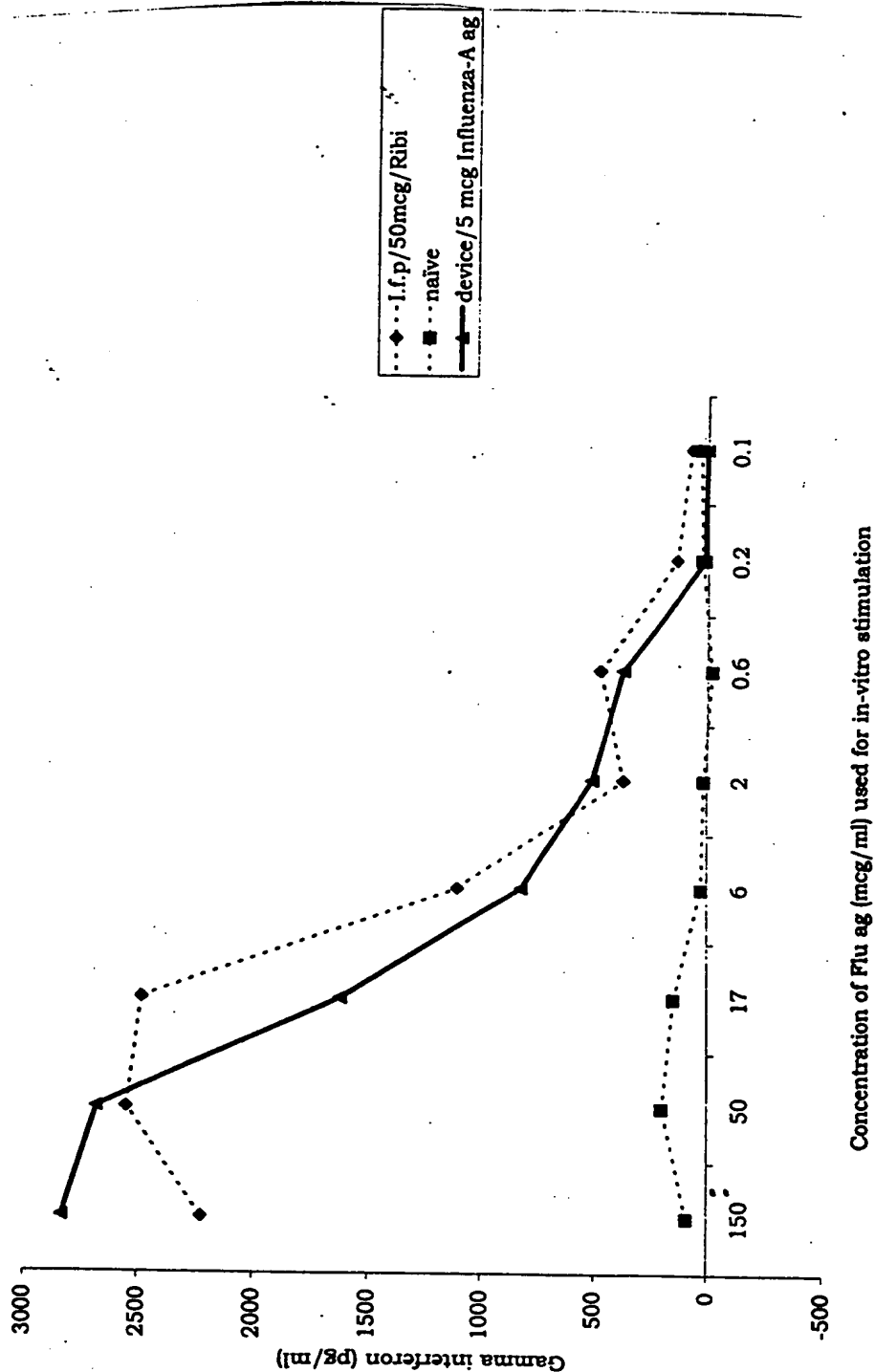


Figure 6

IFN- $\gamma$  secreted by popliteal LN derived T cells following I.f.p  
immunization of Influenza-A (50  $\mu$ g) in the presence of adjuvant  
(Ribi)

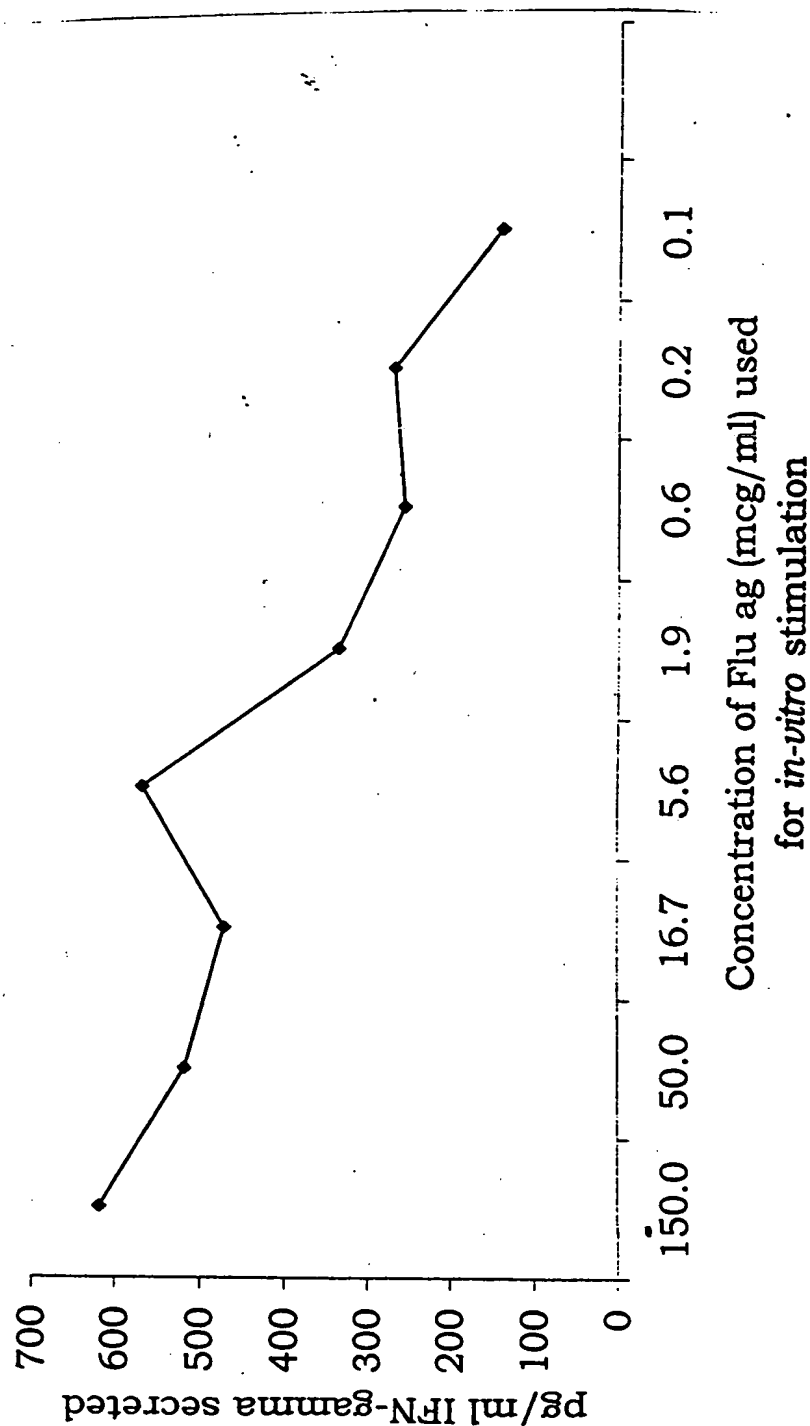


Figure 7

IFN- $\gamma$  secreted by cells aspirated from the device in response to Influenza-A ag, 10 days  
post intra-device administration of Influenza-A antigen

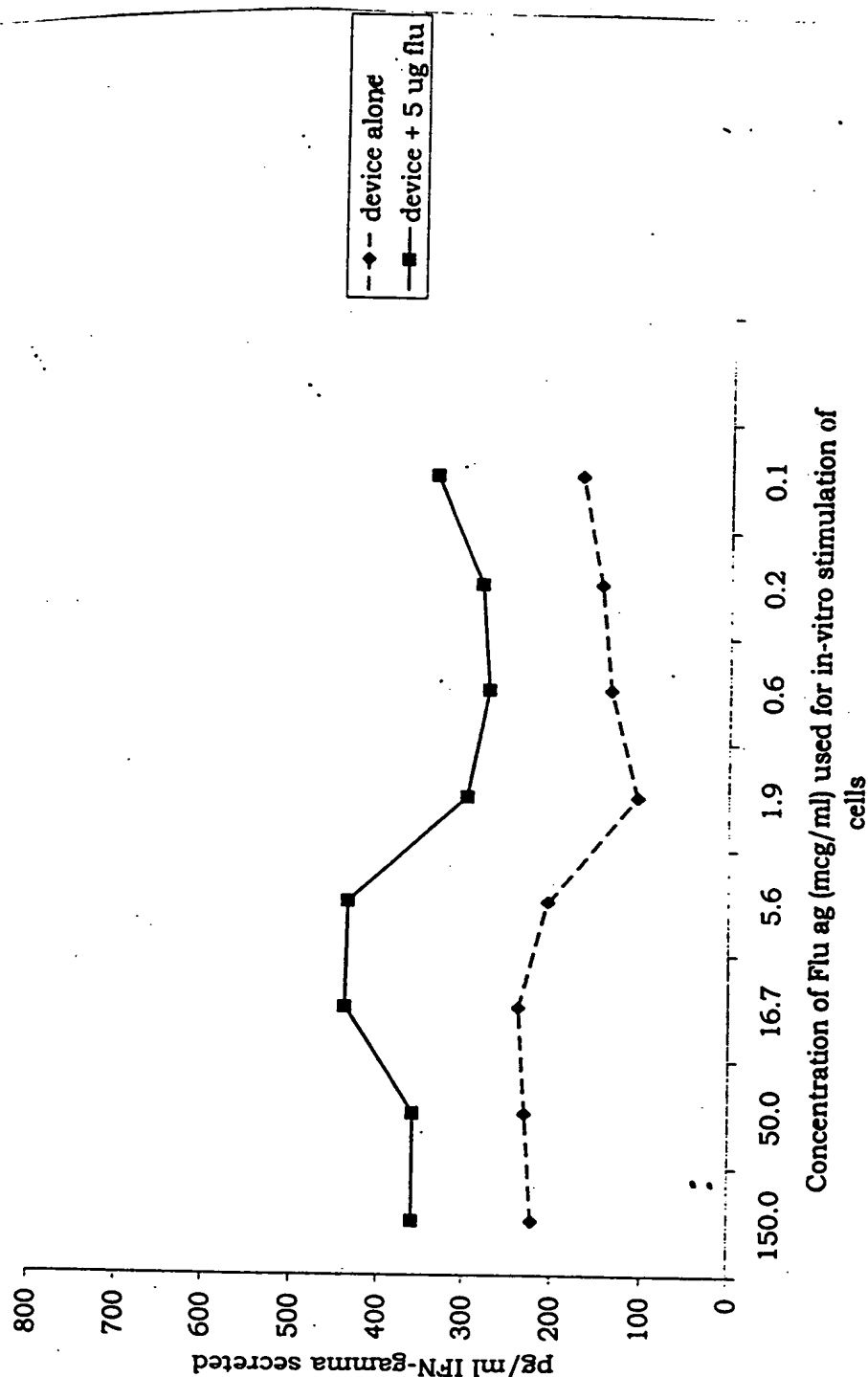


Figure 8



Proliferative response of spleen cells from C57Bl/6 mice immunized with OVA

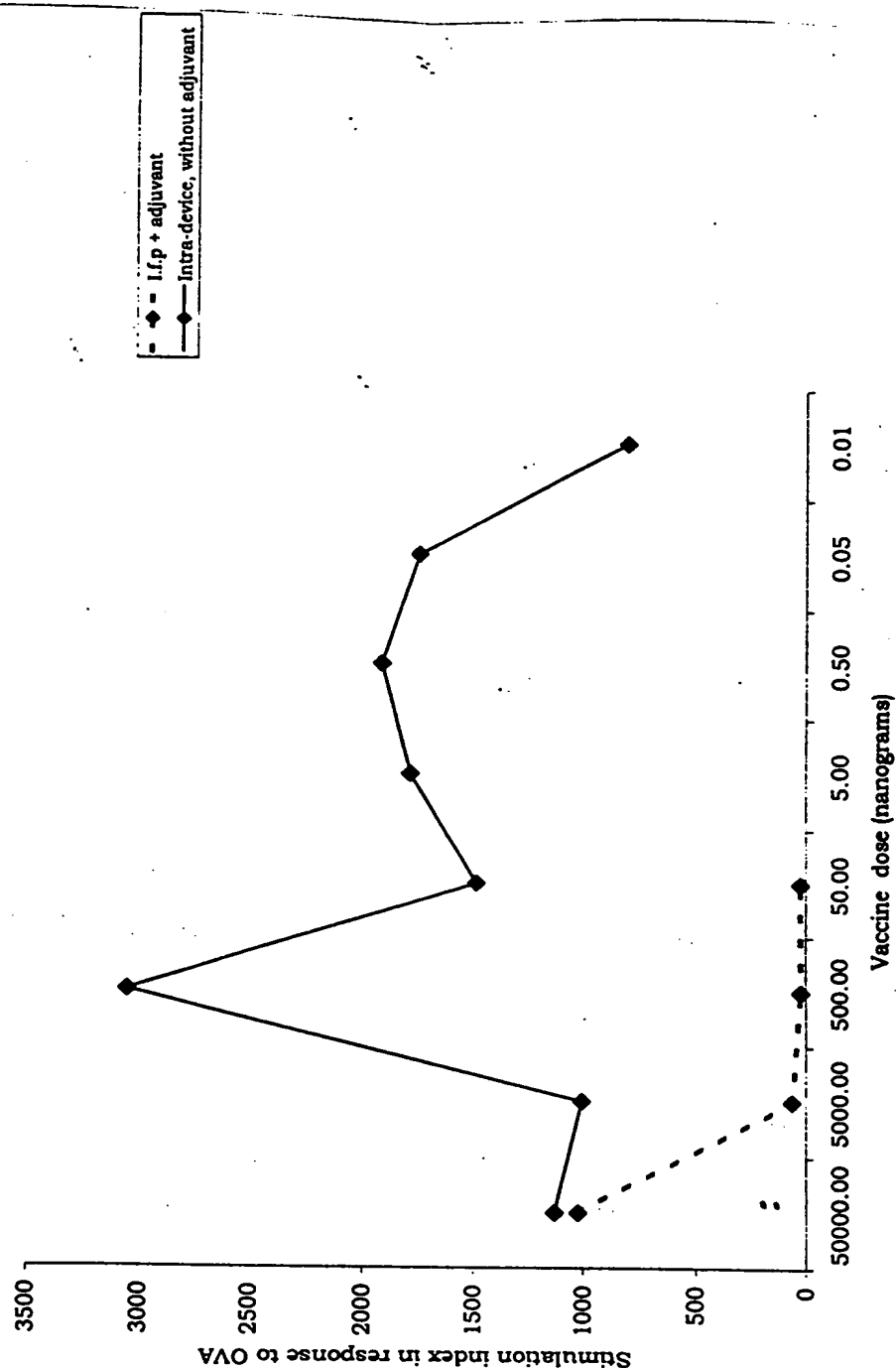


Figure 9

Proliferative response of spleen cells to OVA following a single intra-device immunization in the presence or absence of adjuvant

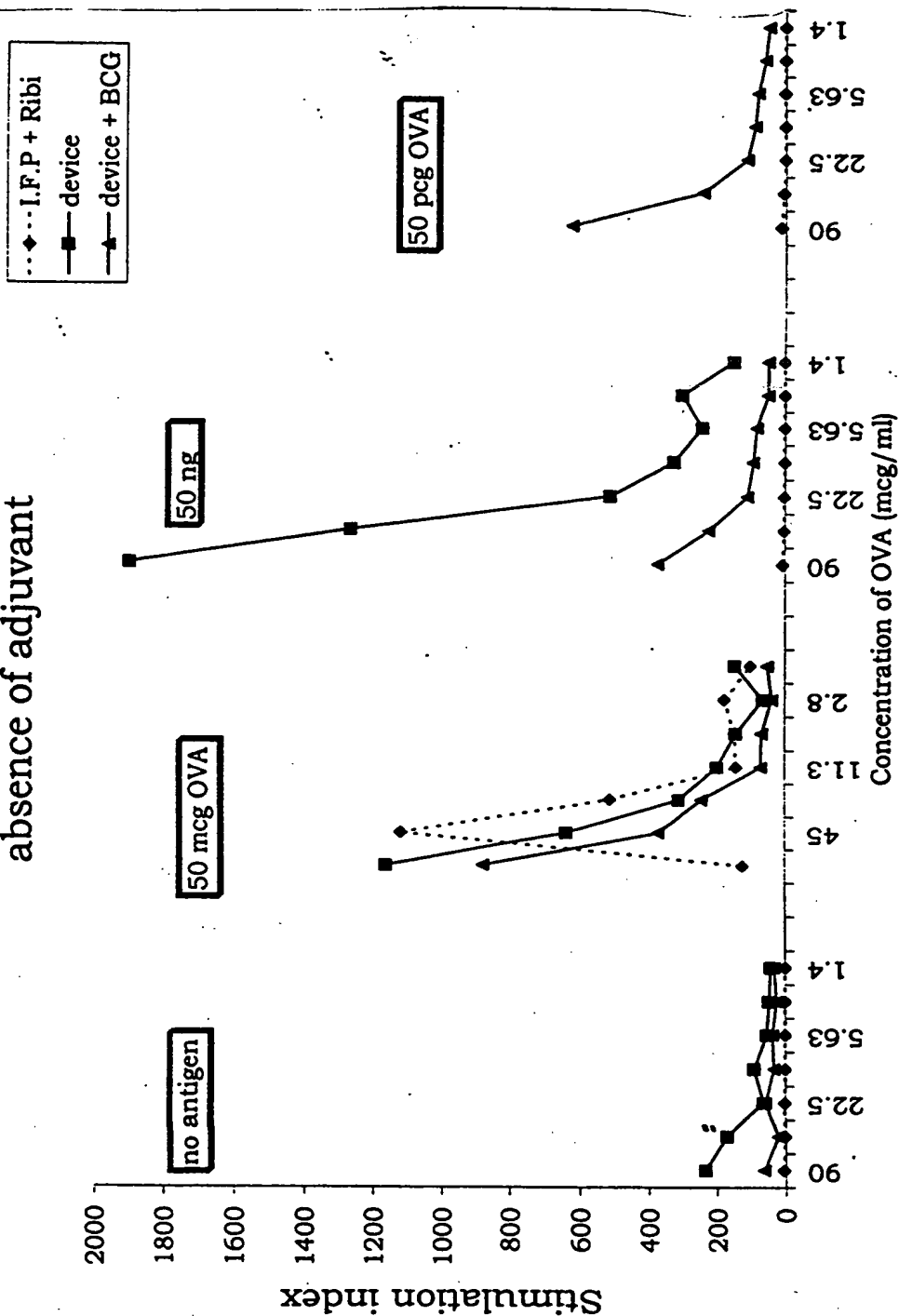


Figure 10

Development of antibody response to HIV gp120 peptide following a single intra-device immunization

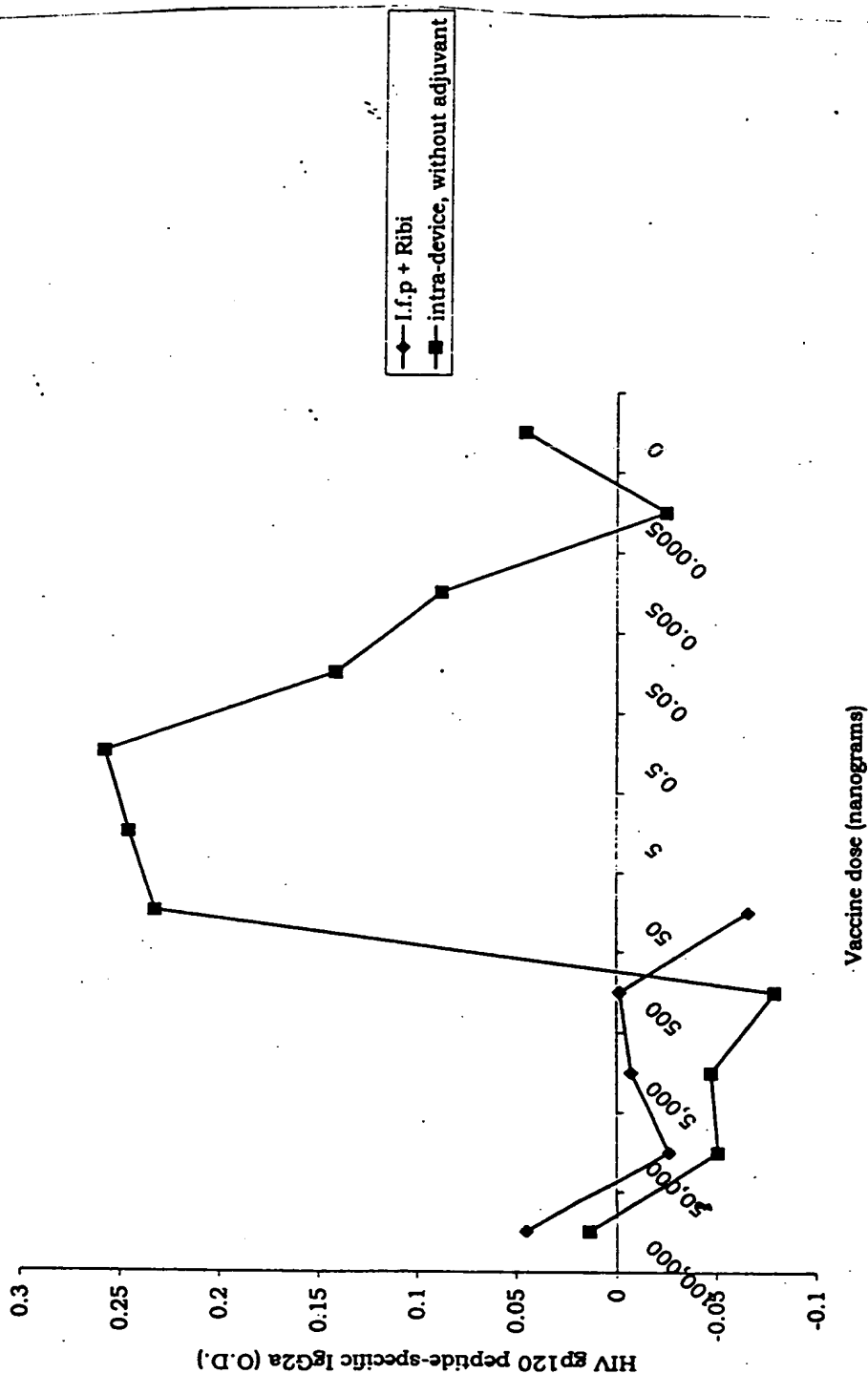


Figure 11

Development of antibody response to HIV gp120 peptide following intra-device immunization in the absence of adjuvant

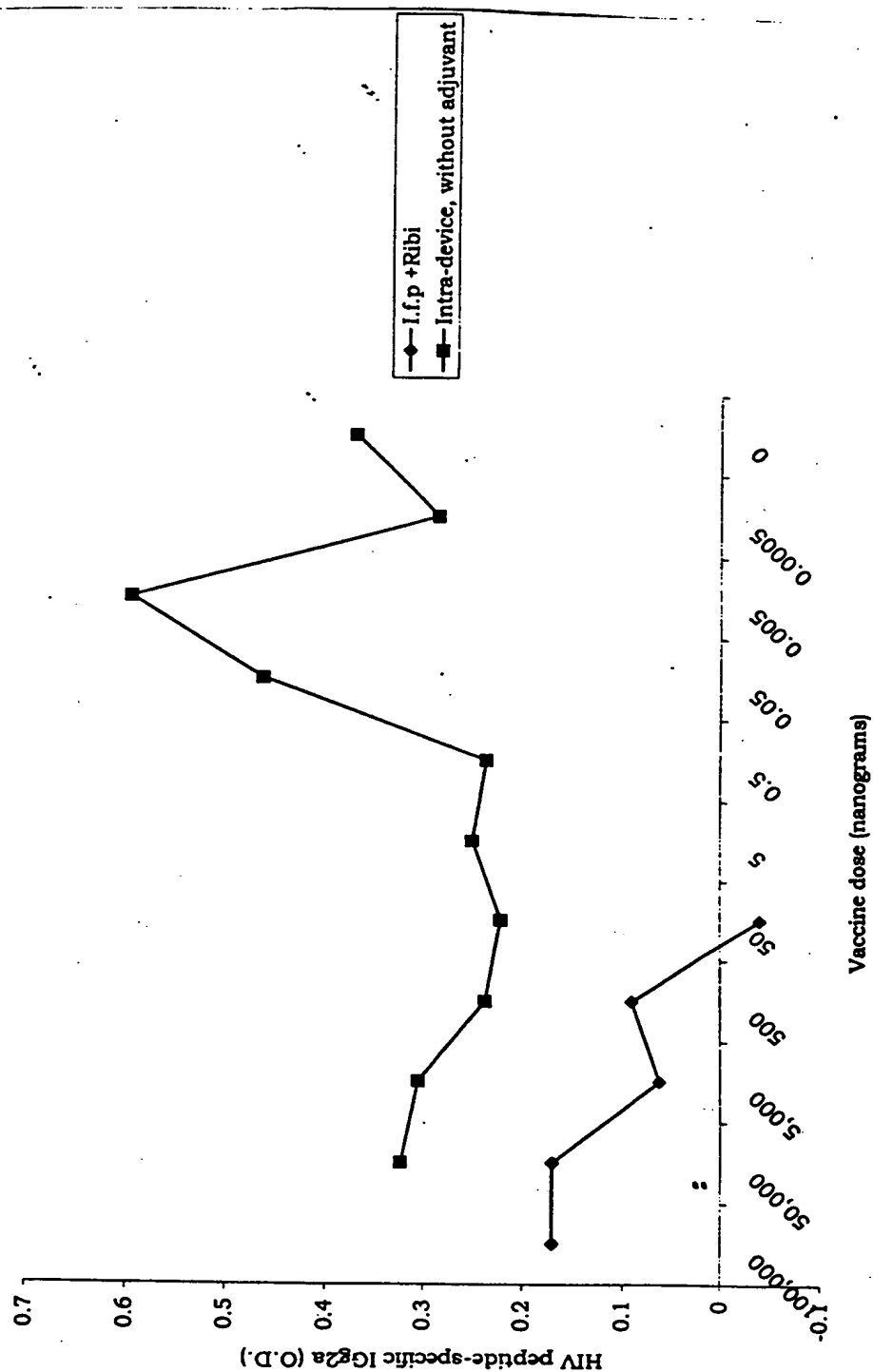
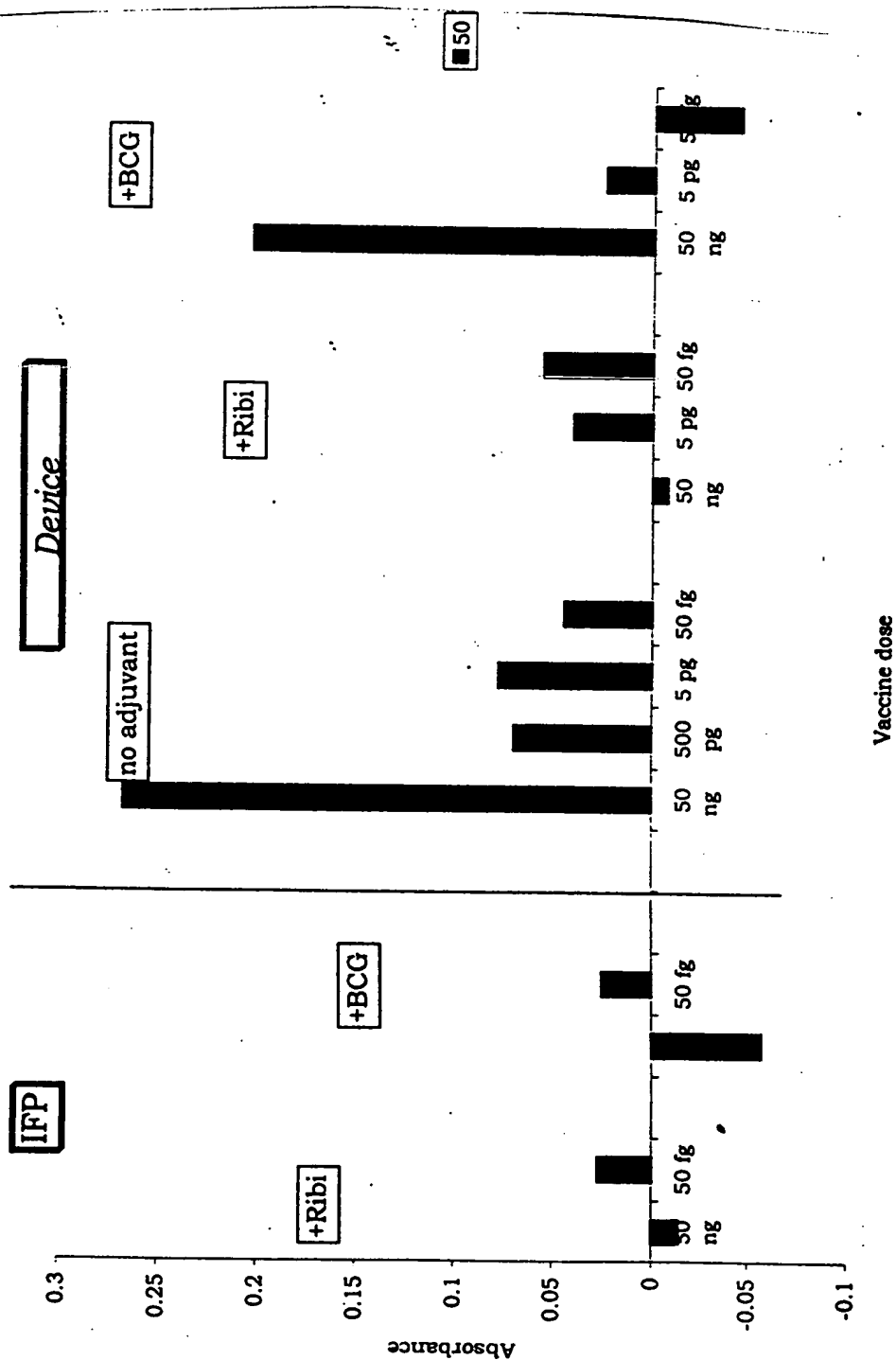


Figure 12

### Development of HIV-specific antibodies (IgG2a) following a single intra-device immunization with HIV gp120 peptide (315-322, RIQRGPGRAFTVGK)



## Figure 13

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Cytochrome C-specific antibody (IgG2a) response following a single intra-device immunization in the absence of adjuvant

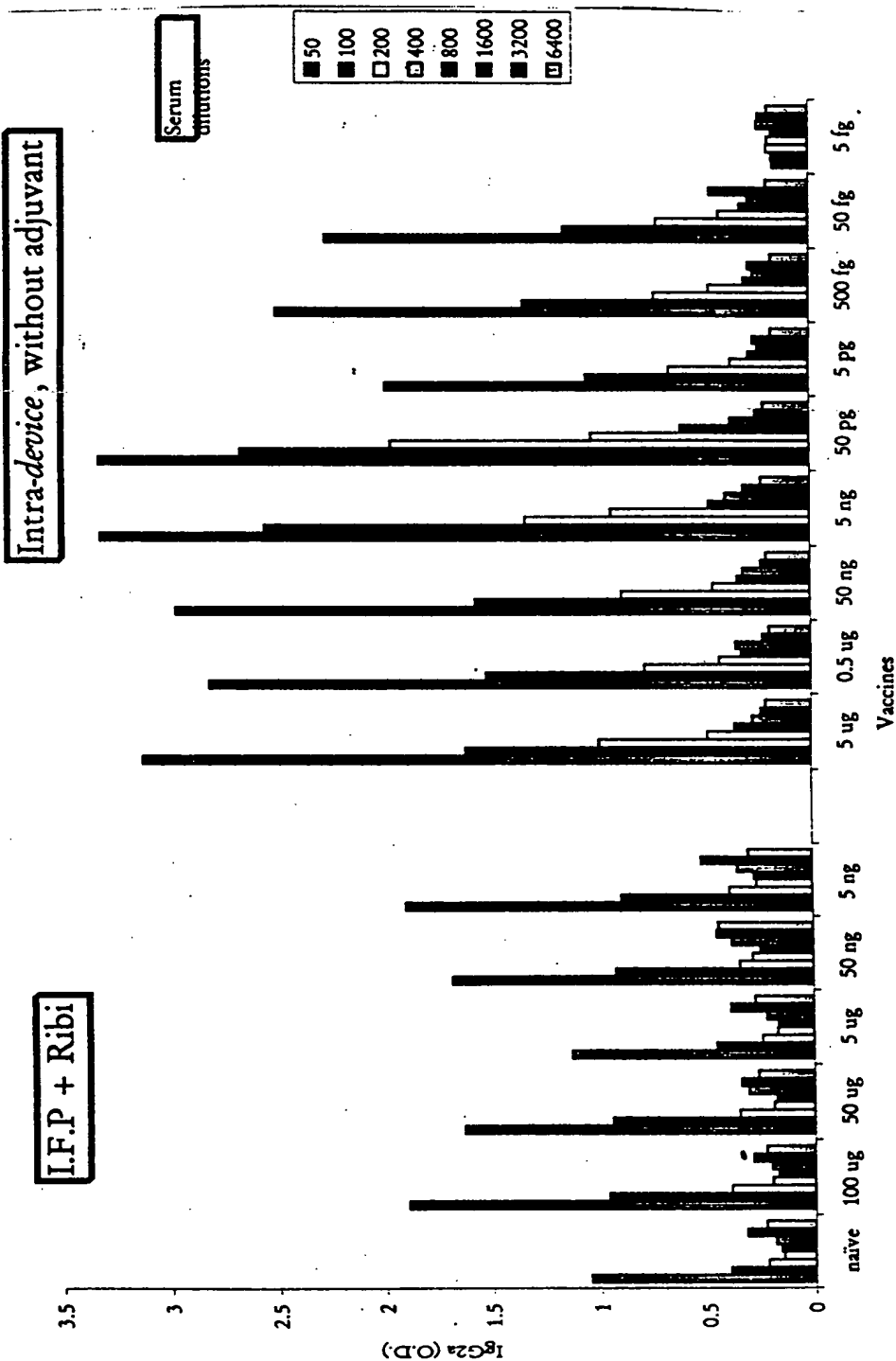


Figure 14

Development of anti-Influenza (PR8 virus) response following a single intra-device immunization with HA antigen in the absence of adjuvant

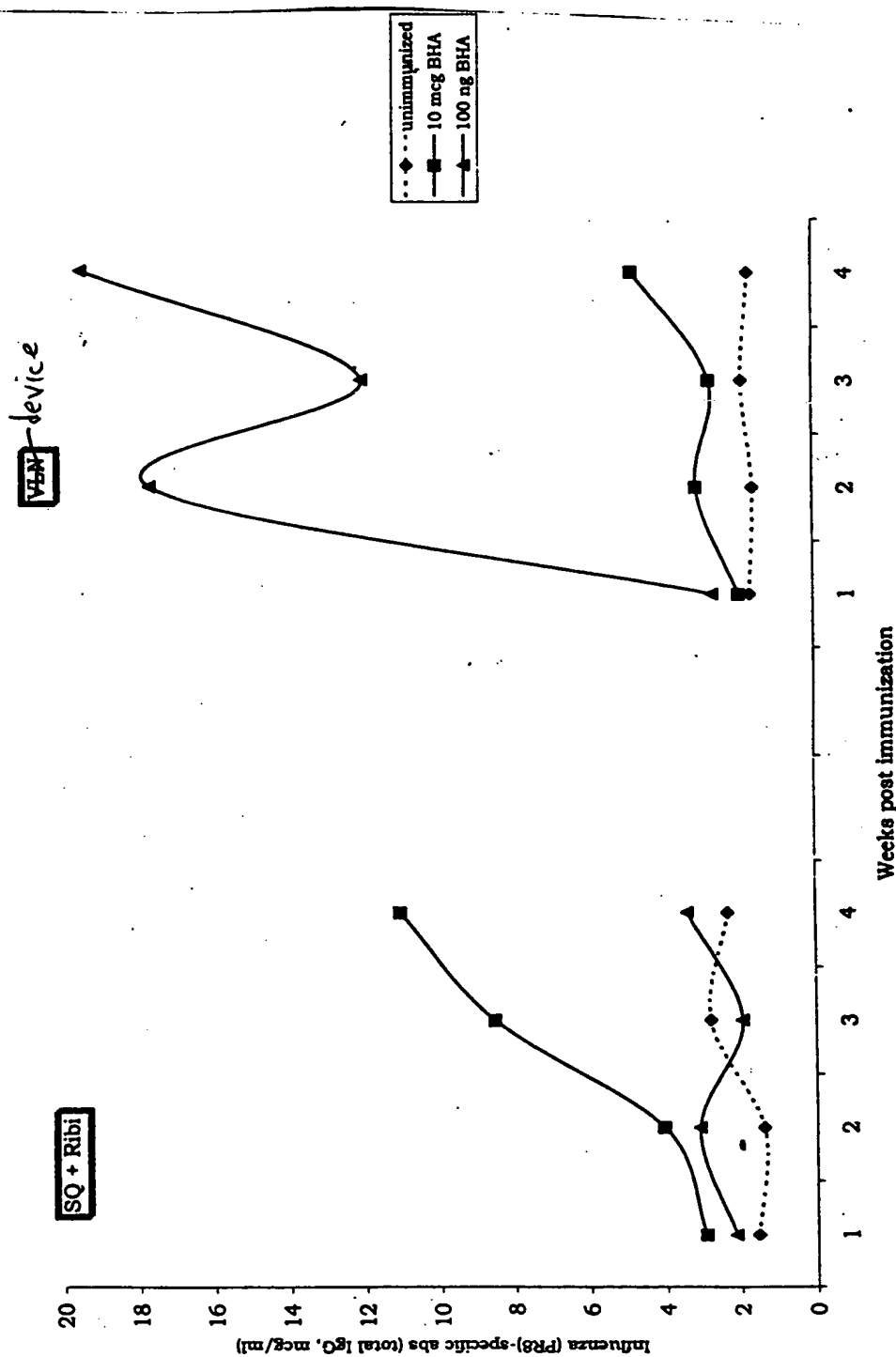


Figure 15

The tubing+sponge prototype of *device* is superior to the sponge alone in eliciting a proliferative immune response against Flu

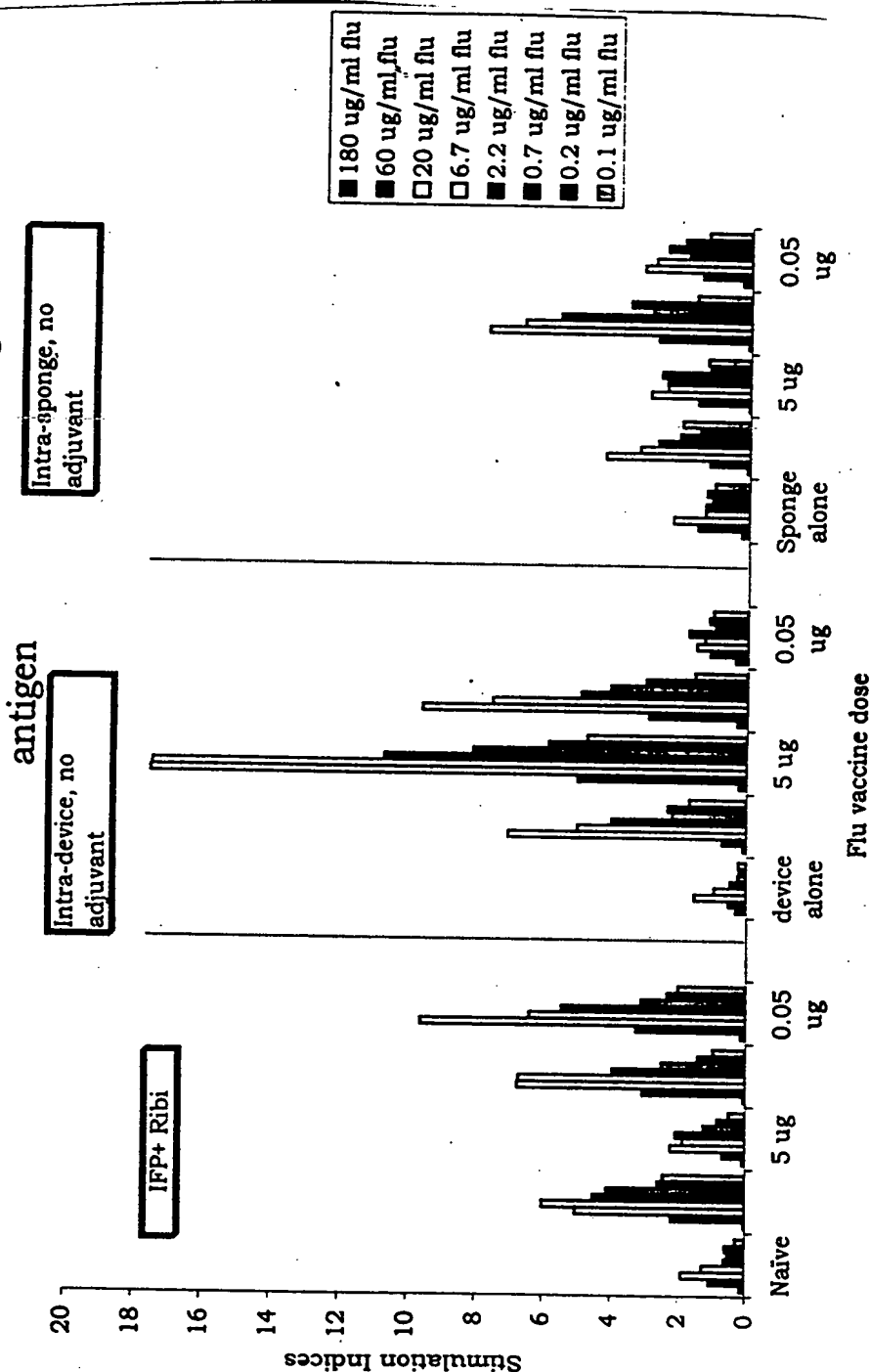


Figure 16



The tubing+sponge prototype of *device* is superior to the sponge alone in eliciting a proliferative immune response against Flu antigen (control graph: using EBV as unrelated antigen)

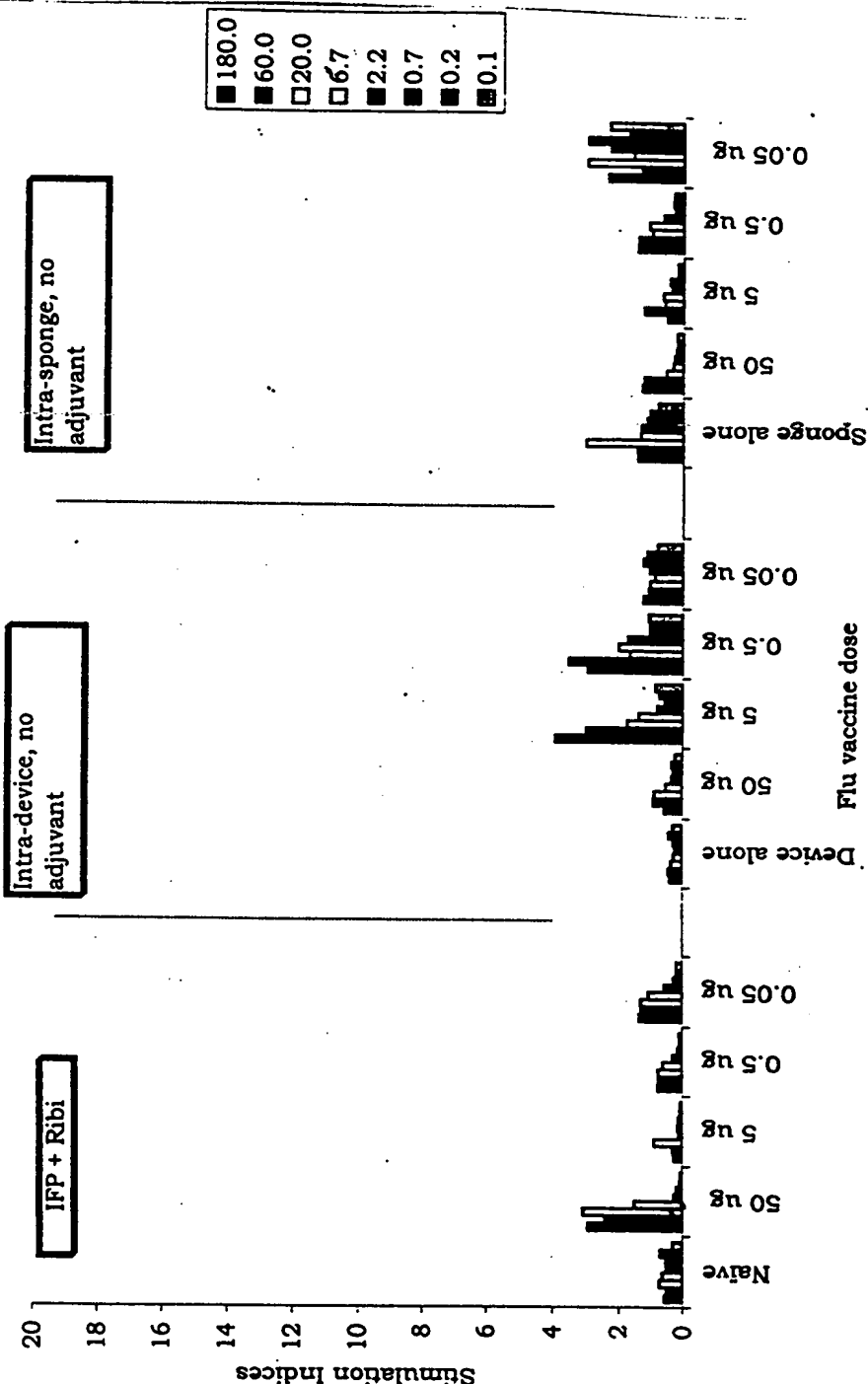


Figure 17

Diffusion of antigen from sponge as compared to device

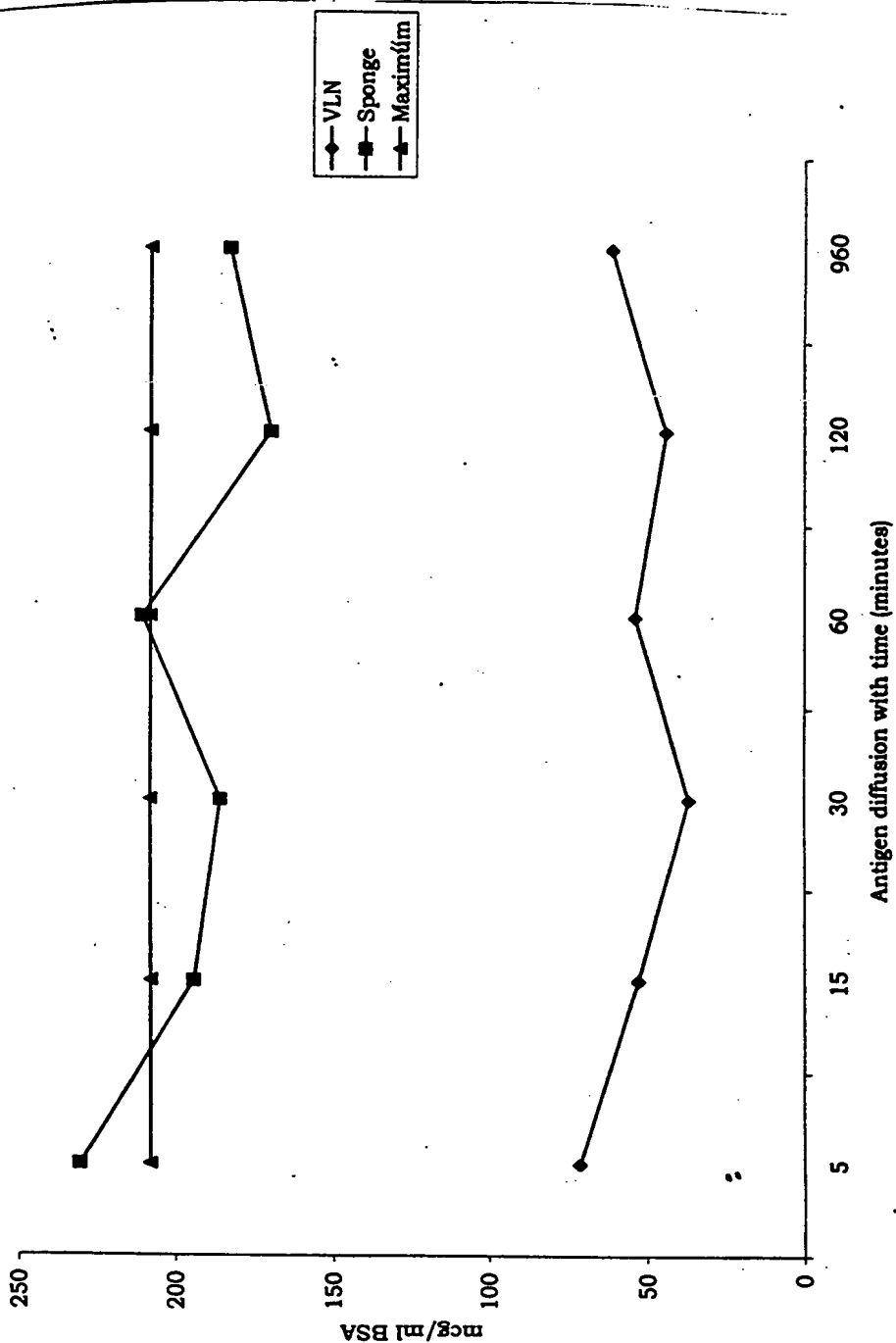
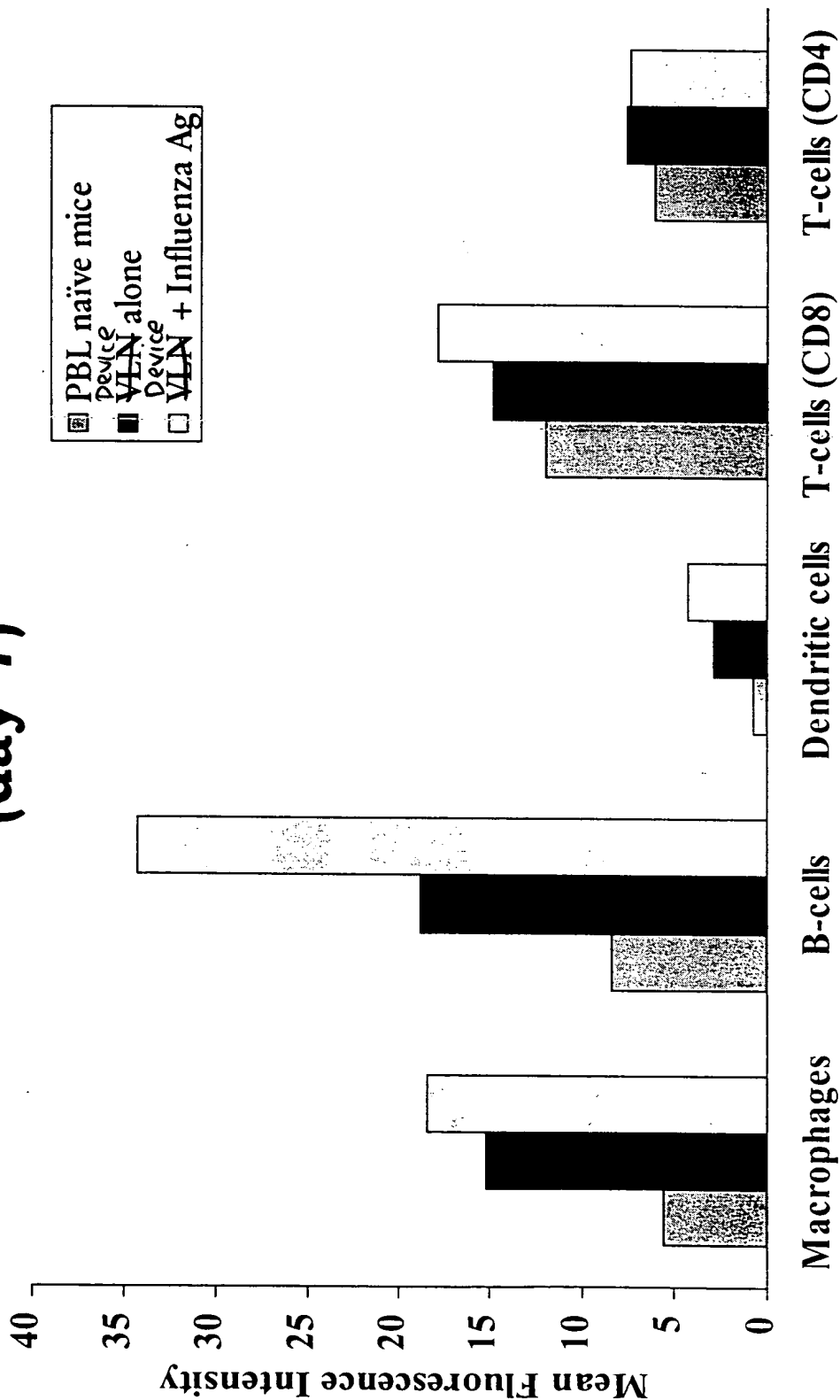


Figure 18

# Cells Critical To An Immune Response Accumulate in the VLN Device (day 7)



# The Microenvironment Of The VLN<sup>Device</sup> Contains High Levels Of Stimulatory Cytokines

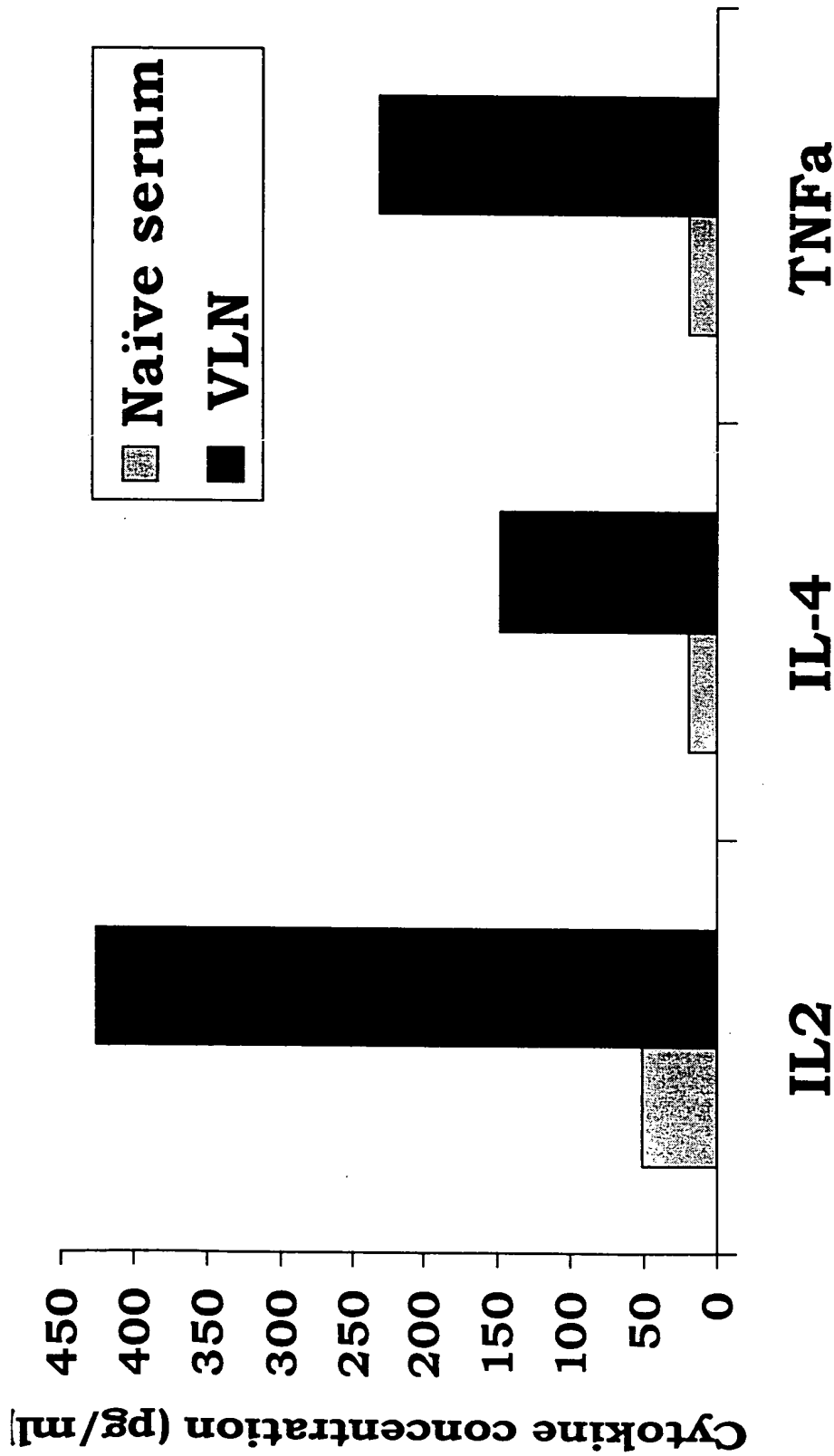
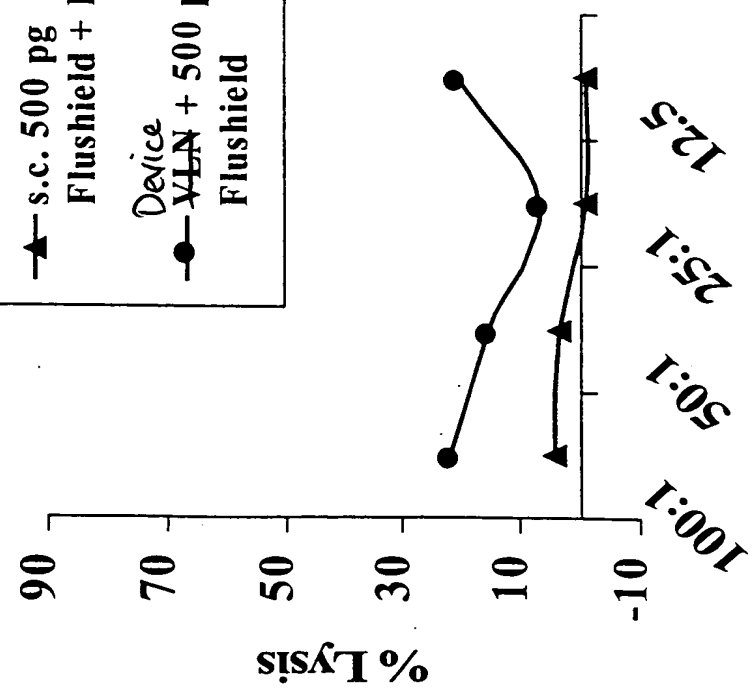
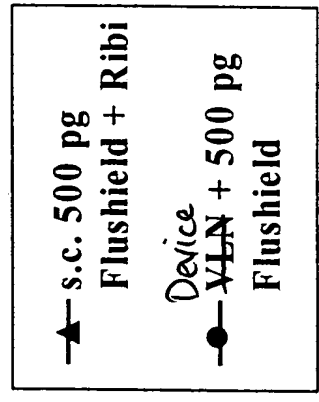


Figure 3- 20/24 20

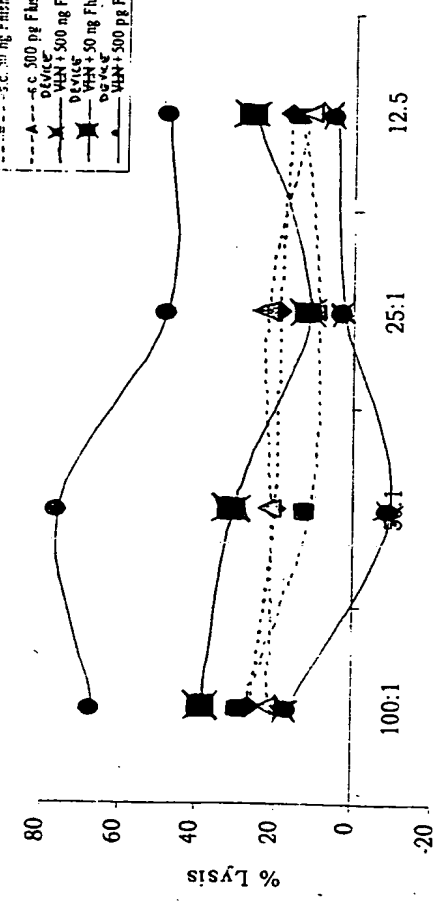
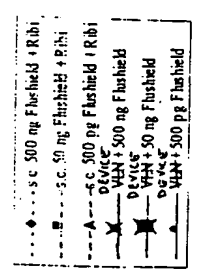
Device

# VLN immunization Elicits Influenza-Specific CTLs



Non-infected Targets

## Device Immunization elicited influenza-specific CTLs capable of lysing PR8-infected P1.HTR target cells in-vitro



PR8-infected P1.HTR target cells

# Humoral response to influenza following a single immunization with 50 ng of FluShield

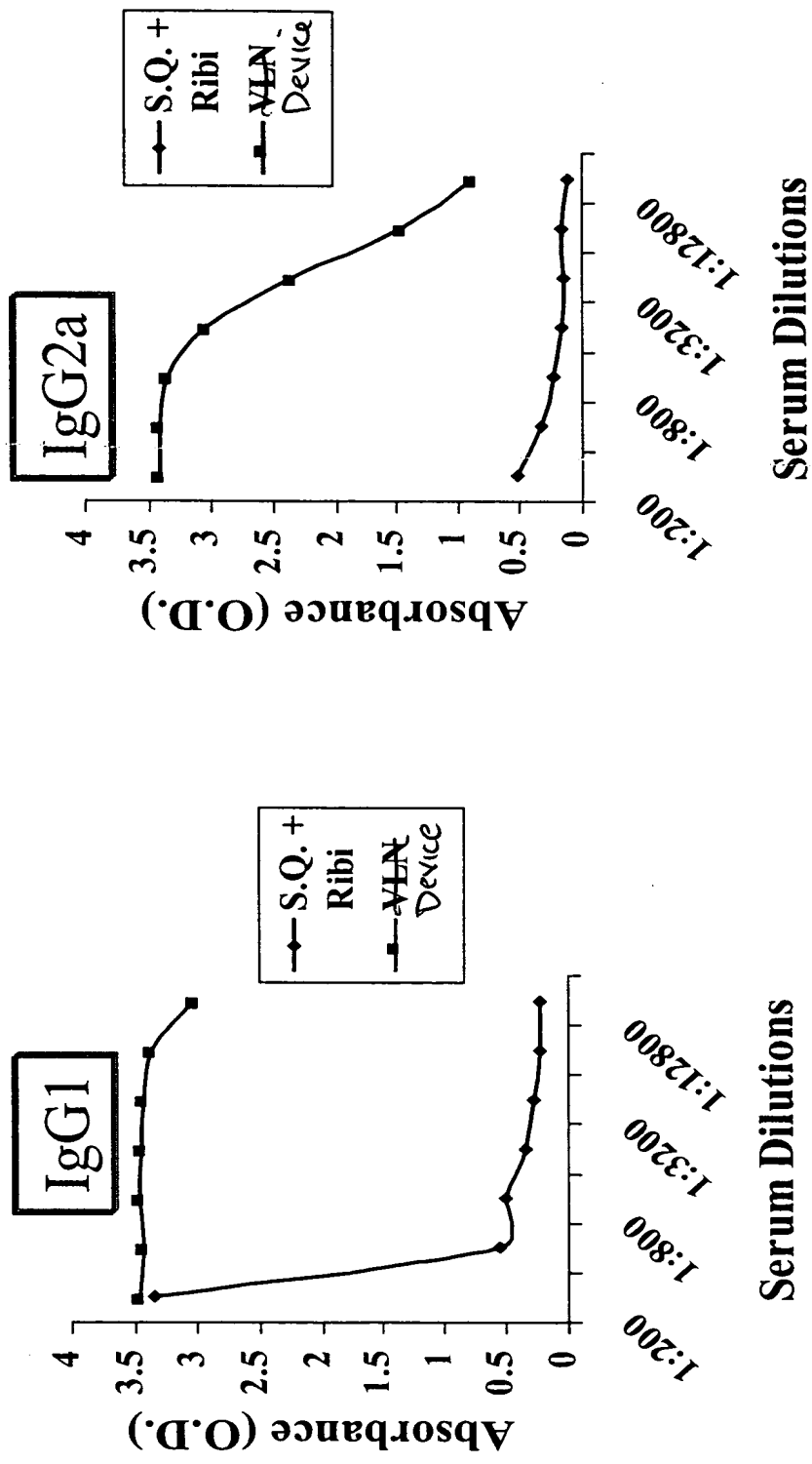
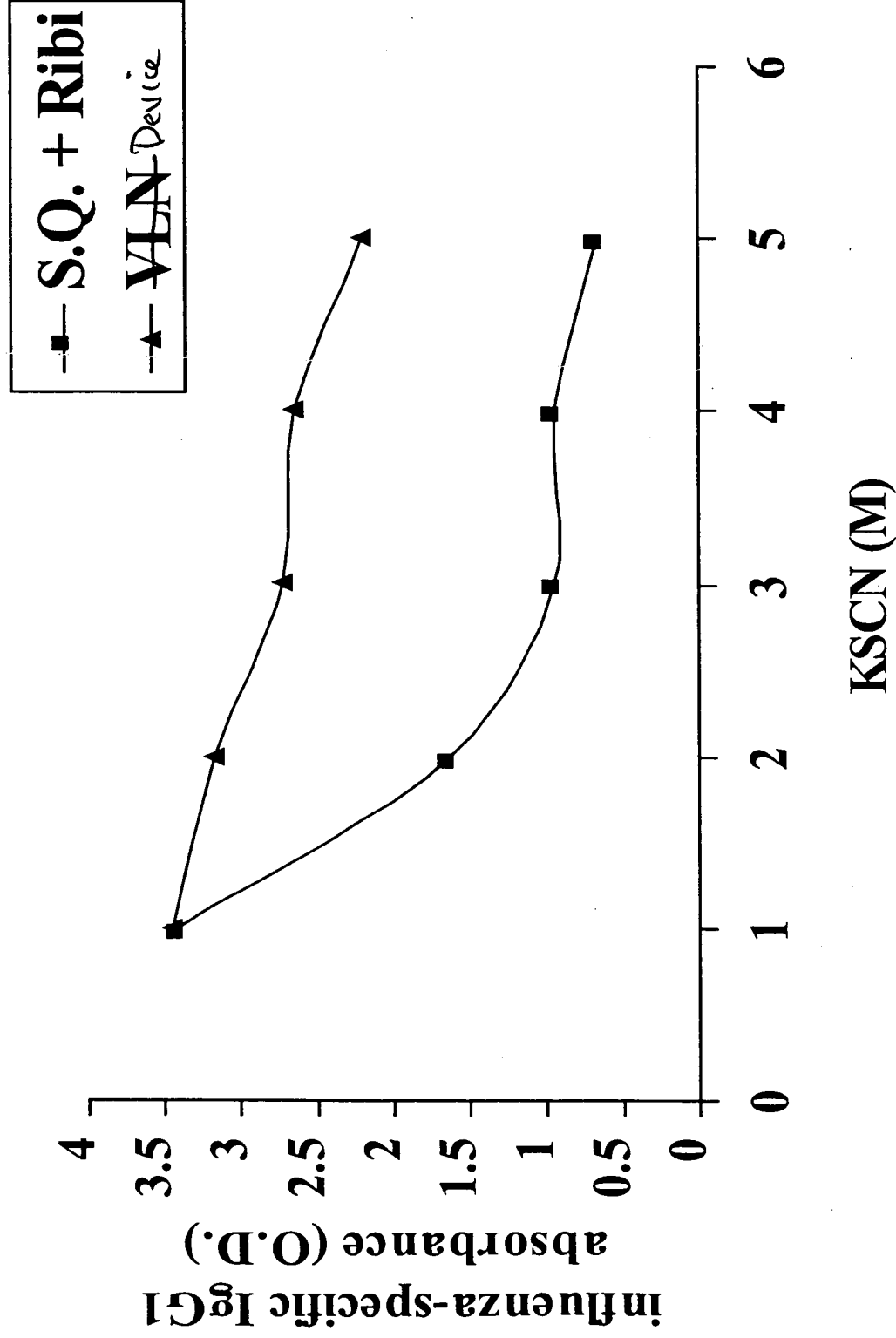


Figure 7a 22/2422

# Relative Affinity Of Serum Antibodies Measured By KSCN Elution Assay



# Immunization With FluShield Protects BALB/C Mice From Lethal Challenge With Influenza Virus

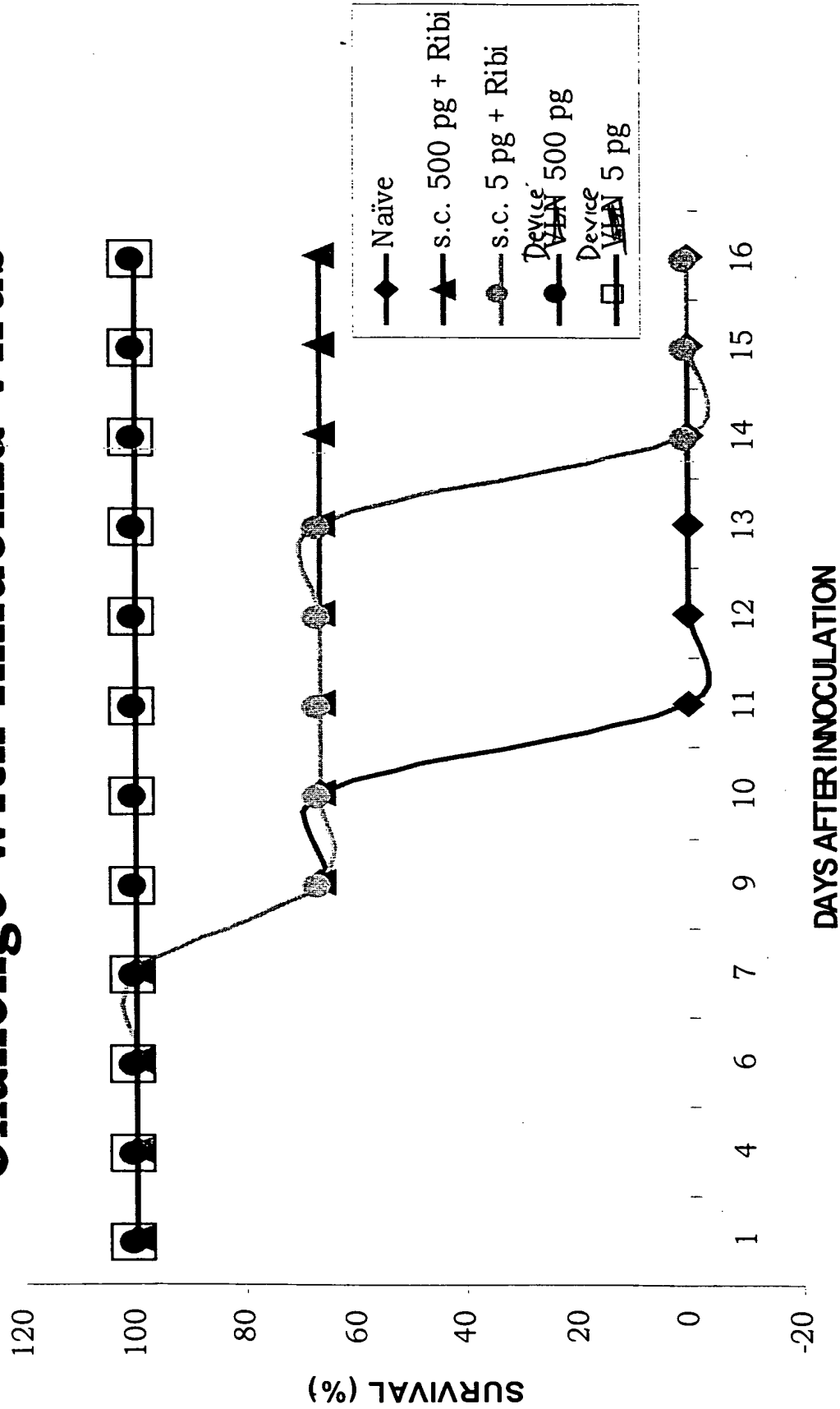
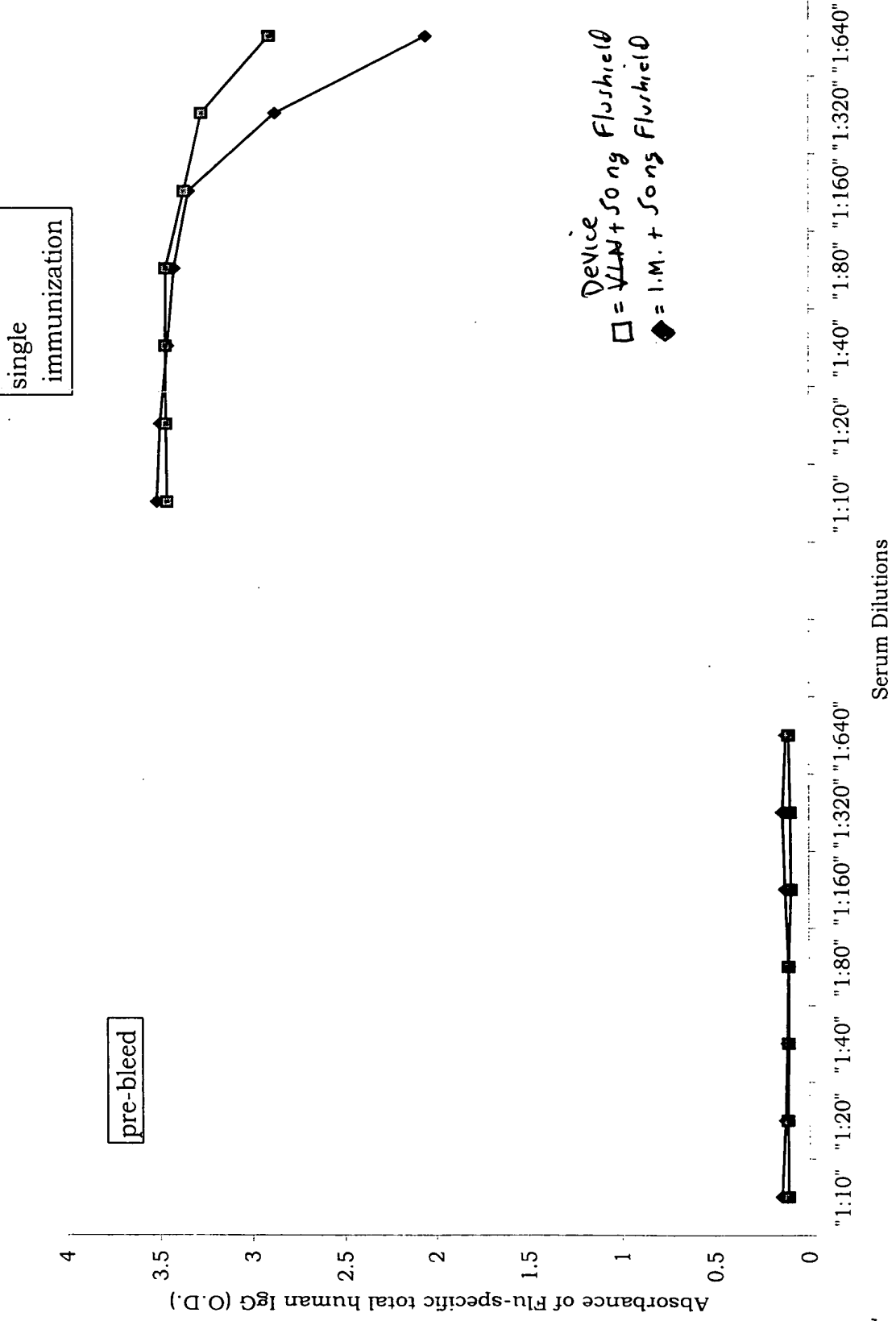


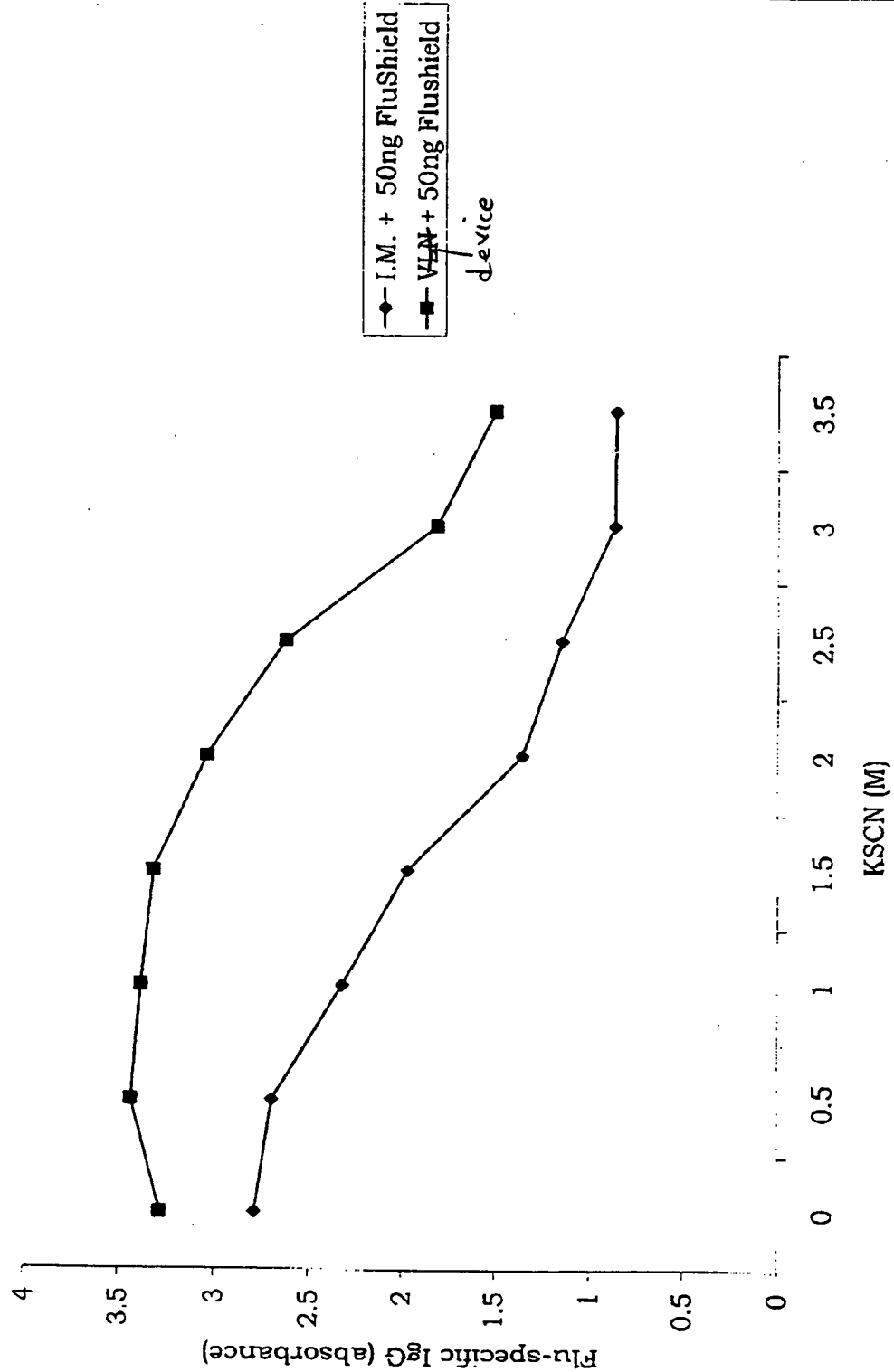
Figure 8 27/24 24



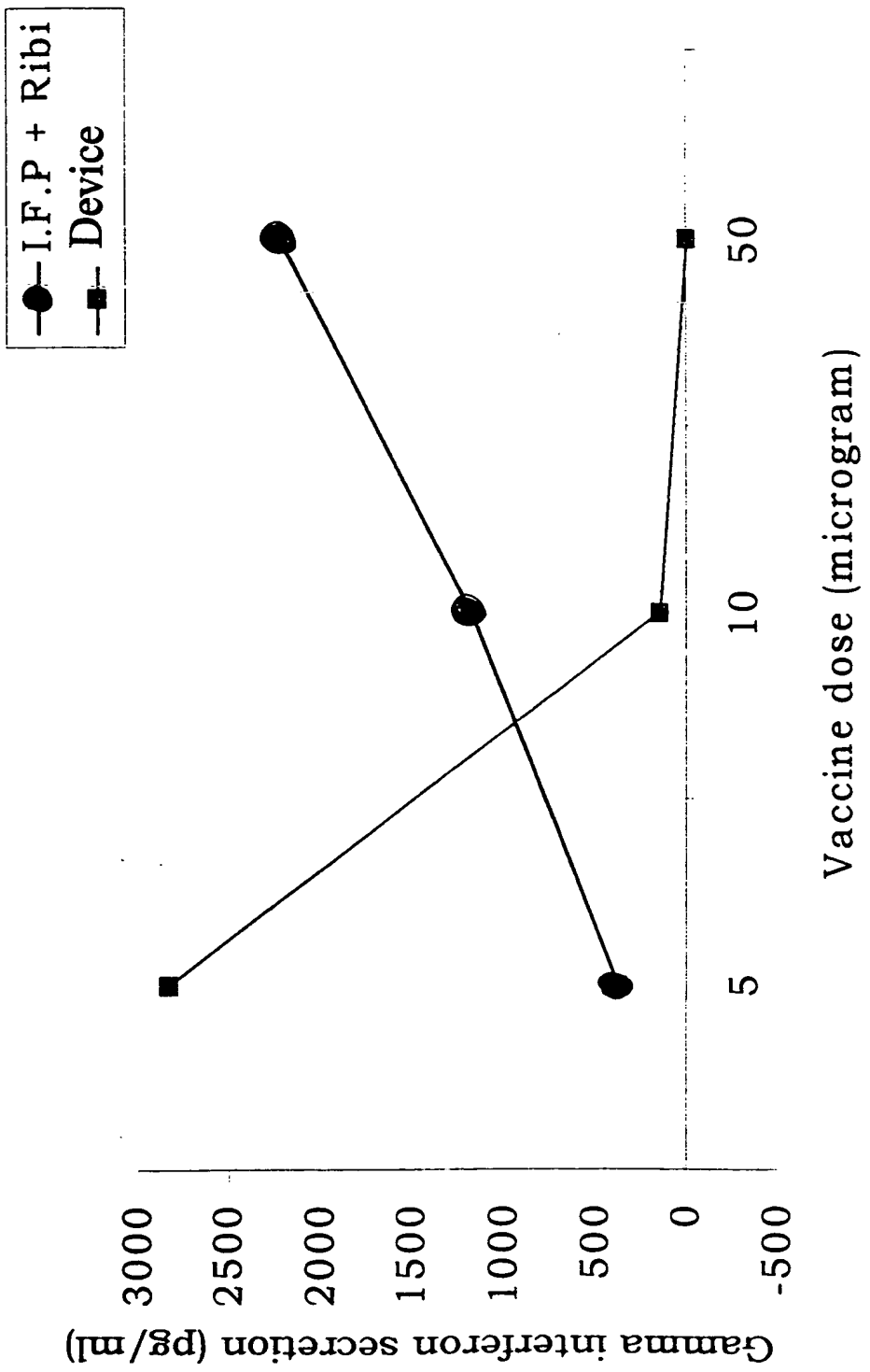
Flu-specific human IgG in serum of HuPBL-SCID Beige CD17 mice following  
device VLN immunization with 50 ng FluShield



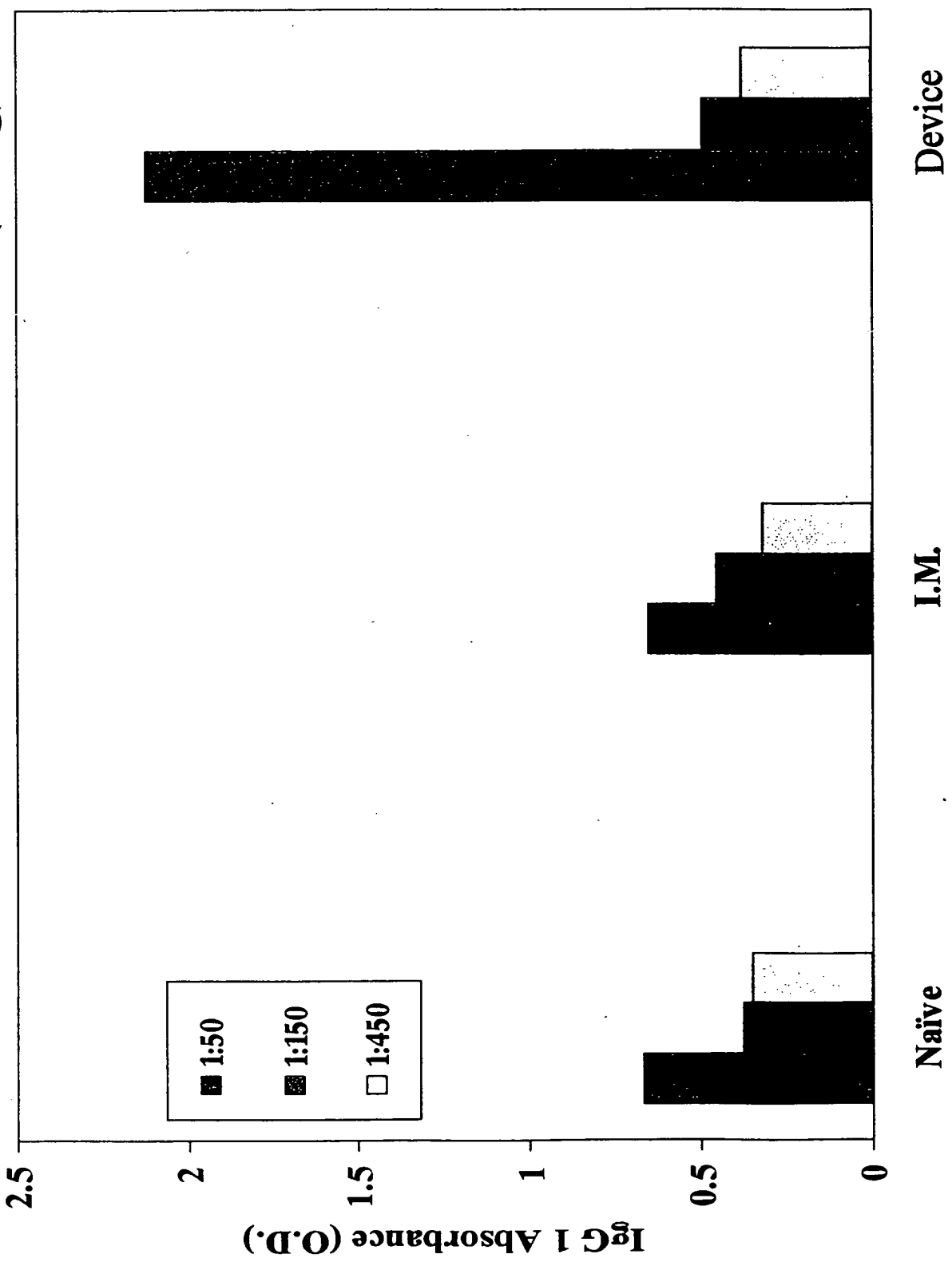
Relative affinity of human antibodies generated in SCID mice infused with human PBL following a single immunization



Higher amounts of <sup>Antigen</sup> ~~Antigen~~ in device switch off the Immune Response

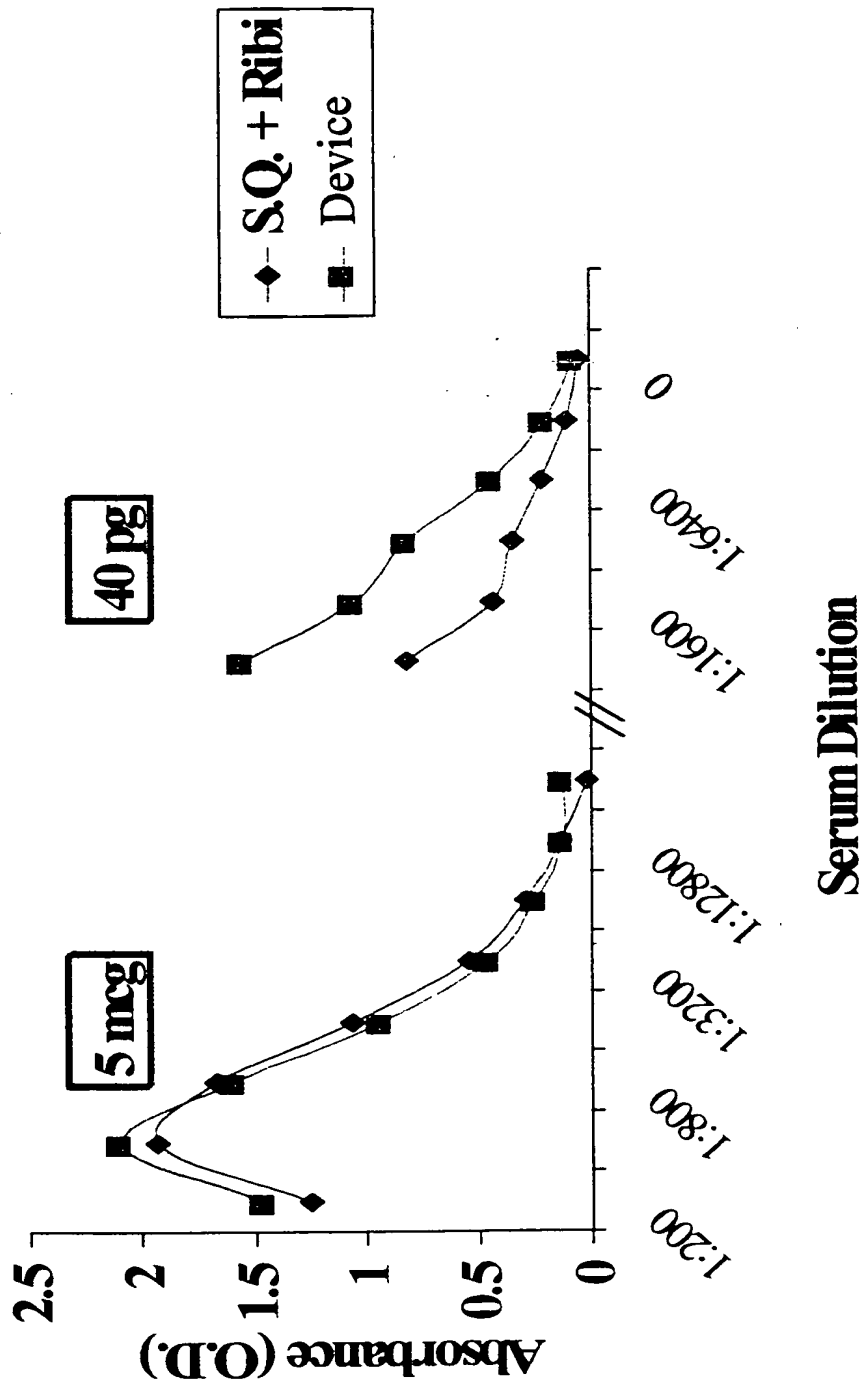


# IgG1 Response to OV7 Antigen Following a Single Immunization With Plasmid DNA (50 ng)

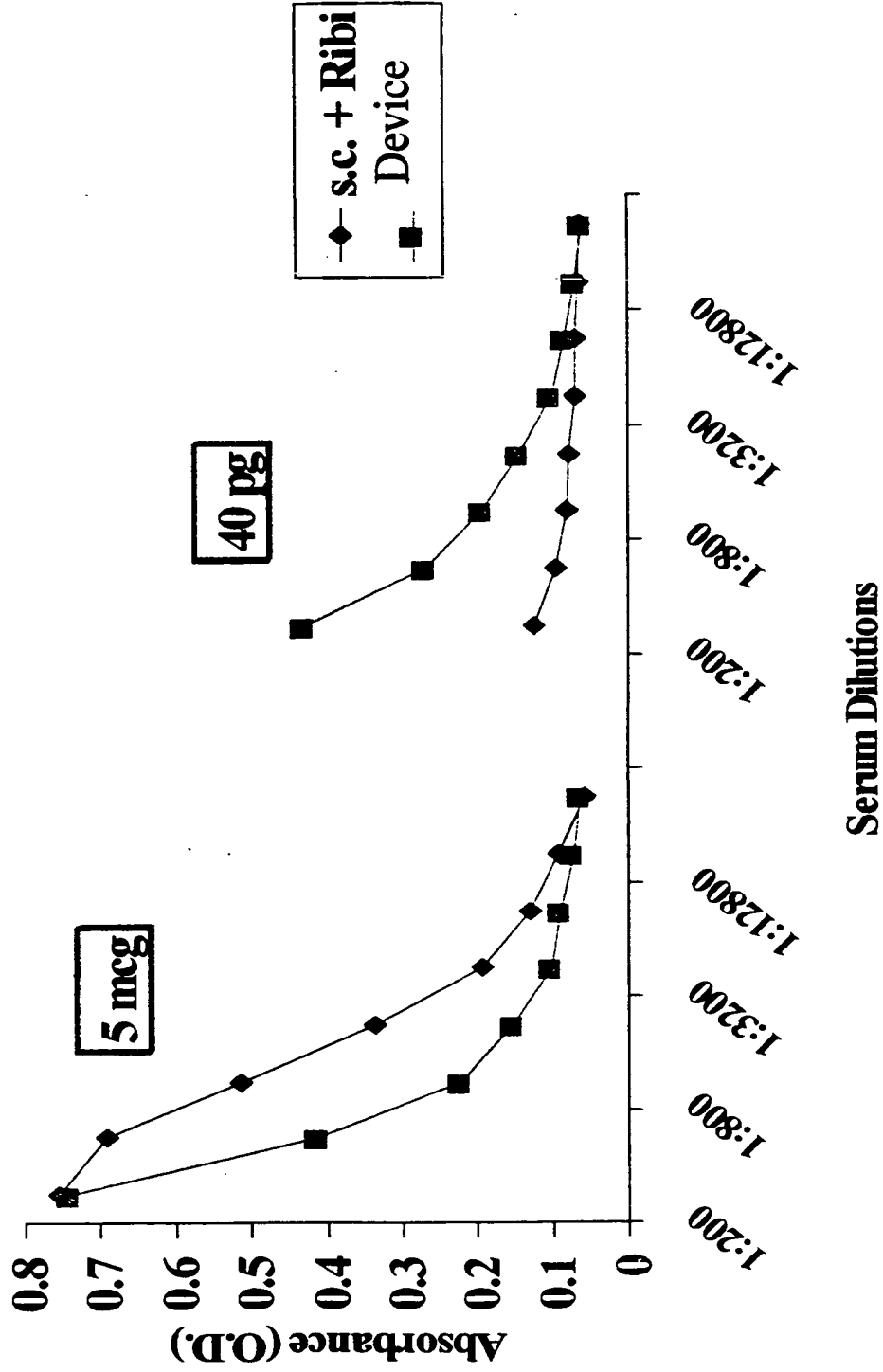


~ 9.24.20 7.8

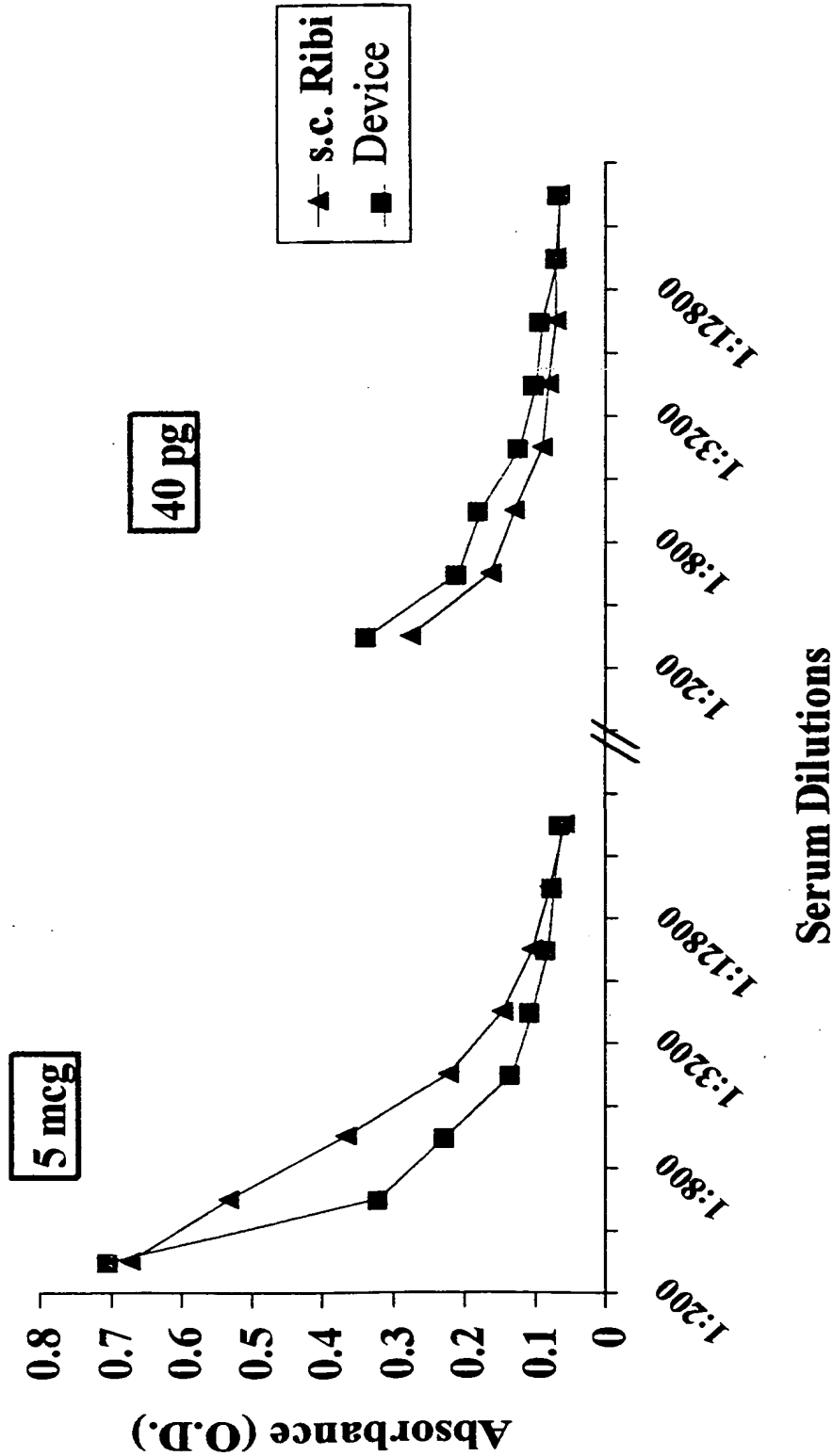
# Total IgG Response to Pneumococcal Polysaccharides Following a Single Immunization



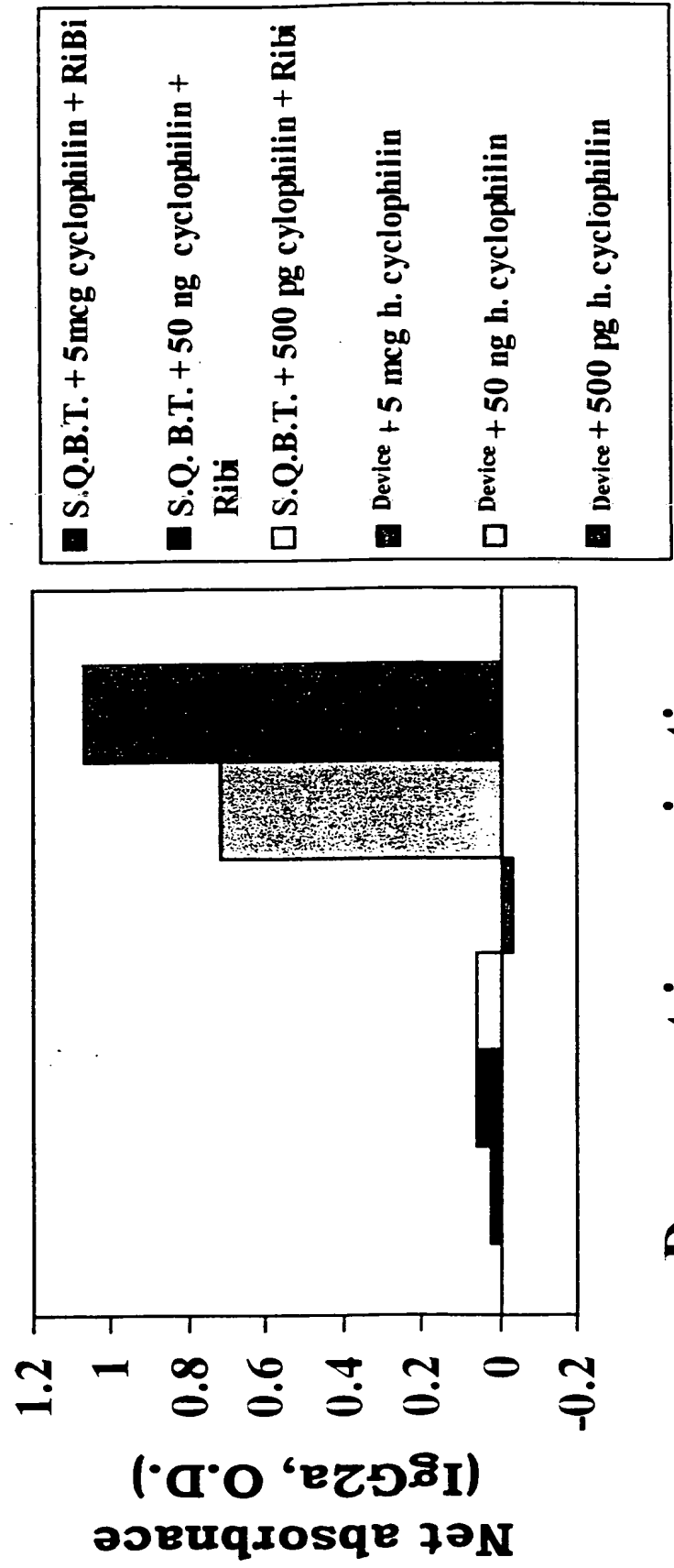
# IgG1 Response to Pneumococcal Polysaccharides Following a Single Immunization



# IgG2a Response to Pneumococcal Polysaccharides Following a Single Immunization



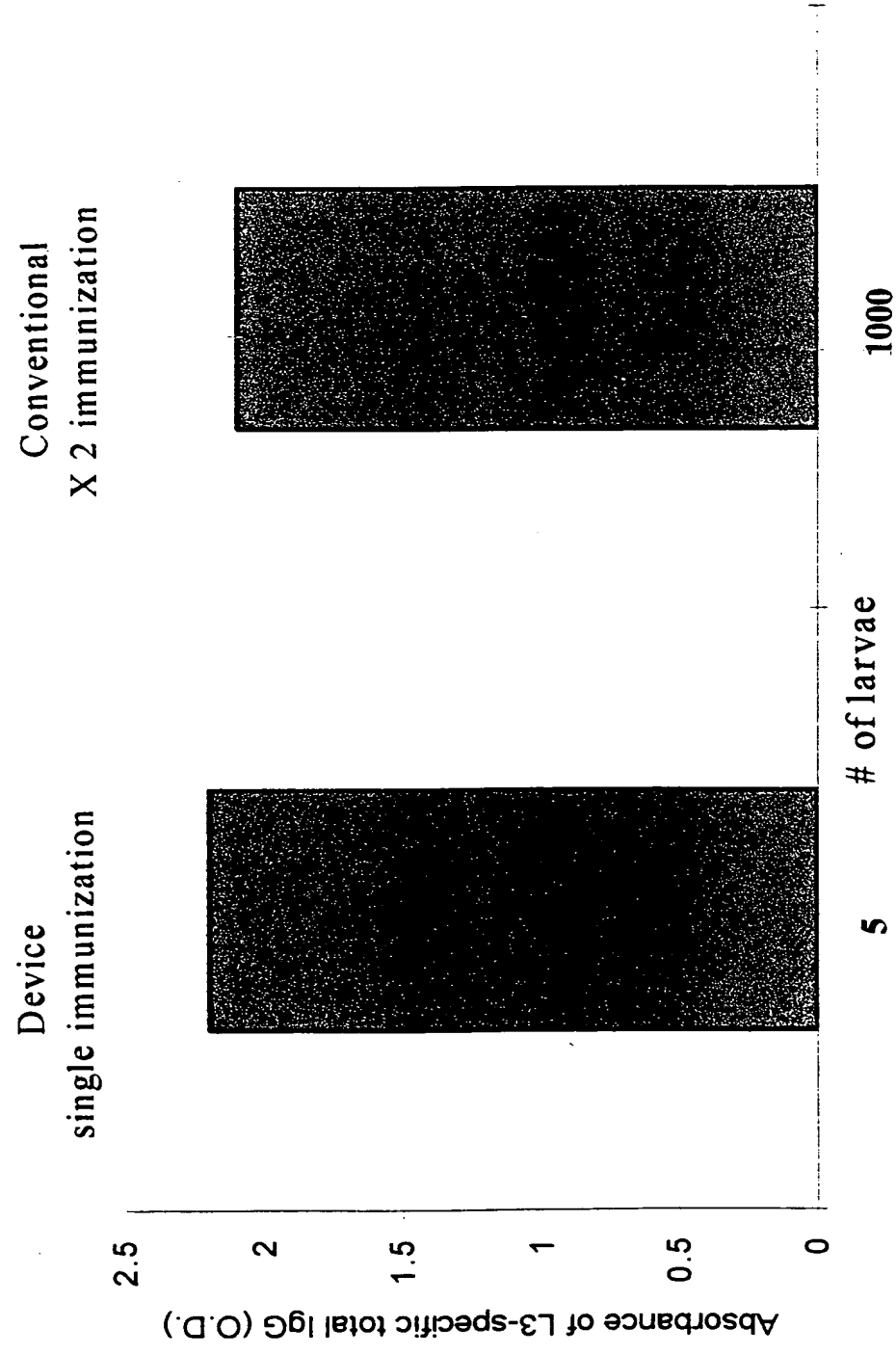
# Induction of antibody response to highly conserved antigen (cyclophilin) following a single device immunization



Days post immunization



# Hookworm-specific total IgG Following intra-device immunization with live larvae



24 36 35 36 34 33